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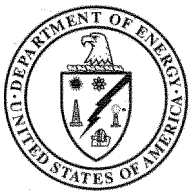
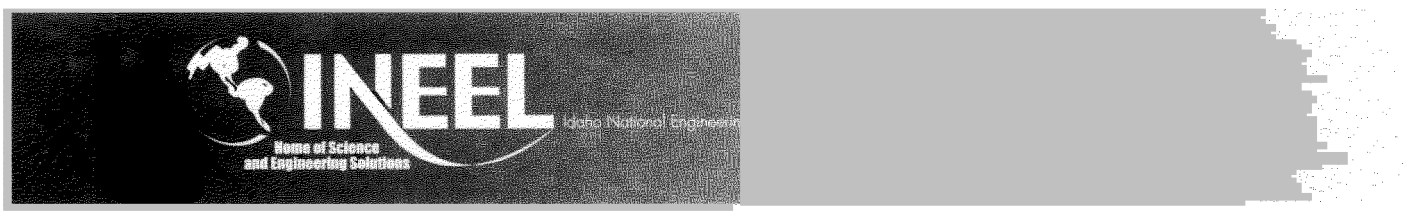


U.S. Department of Energy
Idaho Operations Office

Final Documentation for Operable Unit 5-12 No Action Sites



DOEAD-11058
Revision 0

Final Documentation for Operable Unit 5-12 No Action Sites

September 2003

Prepared for the
U.S. Department of Energy
Idaho Operations Office

ABSTRACT

This report provides final documentation for the No Action Sites at Waste Area Group *5,* Operable Unit 5-12. The report includes summaries for each site with photographs and descriptions. The No Action Sites do not require institutional controls and are included herein as a closeout measure and for historical purposes only.

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FIGURES

TABLES

ACRONYMS

ARA	Auxiliary Reactor Area
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
COCA	Consent Order and Compliance Agreement
DD&D	deactivation, decontamination and dismantlement
DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy Idaho Operations Office
EG&G	Edgerton, Germeshausen, and Grier
EPA	U.S. Environmental Protection Agency
FFA/CO	Federal Facility Agreement and Consent Order
FR	Federal Register
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
INEEL	Idaho National Engineering and Environmental Laboratory
LMITCO	Lockheed Martin Idaho Technologies Conipany
MWSF	Mixed Waste Storage Facility
ou	operable unit
PBF	Power Burst Facility
RI/BRA	remedial investigation/baseline risk assessment
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
RWMC	Radioactive Waste Management Complex
SL-1	Stationary Low-Power Reactor No. 1
SPERT	Special Power Excursion Reactor Test

USC	United States Code
WAG	waste area group
WEDF	Waste Engineering Development Facility
WERF	Waste Experimental Reduction Facility

Final Documentation for Operable Unit 5-12 No Action Sites

1. INTRODUCTION

This report includes the final closeout documentation for Operable Unit (OU) 5-12 sites within the Power Burst Facility (PBF) and Auxiliary Reactor Area (ARA) at the Idaho National Engineering and Environmental Laboratory (INEEL) that require no action. A total of 40 sites were identified in the *Final Record of Decision for Power Burst Facility and Auxiliary Reactor Area* (Department of Energy Idaho Operations Office [DOE-ID 20001) as not requiring institutional controls under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 United States Code [USC] § 960 1 et seq.). The Power Burst Facility contains five separate operational facilities, and the ARA historically comprised four separate facilities. Together, the ARA and PBF areas contain 55 individual release sites, 15 of which were identified in the Record of Decision (ROD) (DOE-ID 2000) as requiring institutional controls. Six of these 15 sites are also identified as requiring remediation in accordance with the ROD. A map of the INEEL delineating the location of Waste Area Group (WAG) 5 is presented in Figure 1.

Because of the presence of residual contamination at two sites originally identified under the ROD (DOE-ID 2000) as not requiring institutional controls (ARA-07 and ARA-08), this report will be limited to 38 of the 40 sites. The need for institutional controls at ARA-07 and ARA-08 is discussed in the *Remedial Action Report for WAG 5, OU 5-12 Phase I Remedial Action: Sites ARA-02, ARA-16, ARA-25, and Inactive Waste System Sites ARA-07, ARA-08, ARA-13, and ARA-21* (DOE-ID 2002), Section 7.4. The decision as to whether to continue institutional controls at the 15 sites identified in the ROD (DOE-ID 2000) as requiring such controls, including the six sites identified as requiring remediation, will be documented in subsequent 5-year reviews for OU 5-12. Following concurrence by the Agencies, the CERCLA signs currently posted at the No Action Sites will be removed.

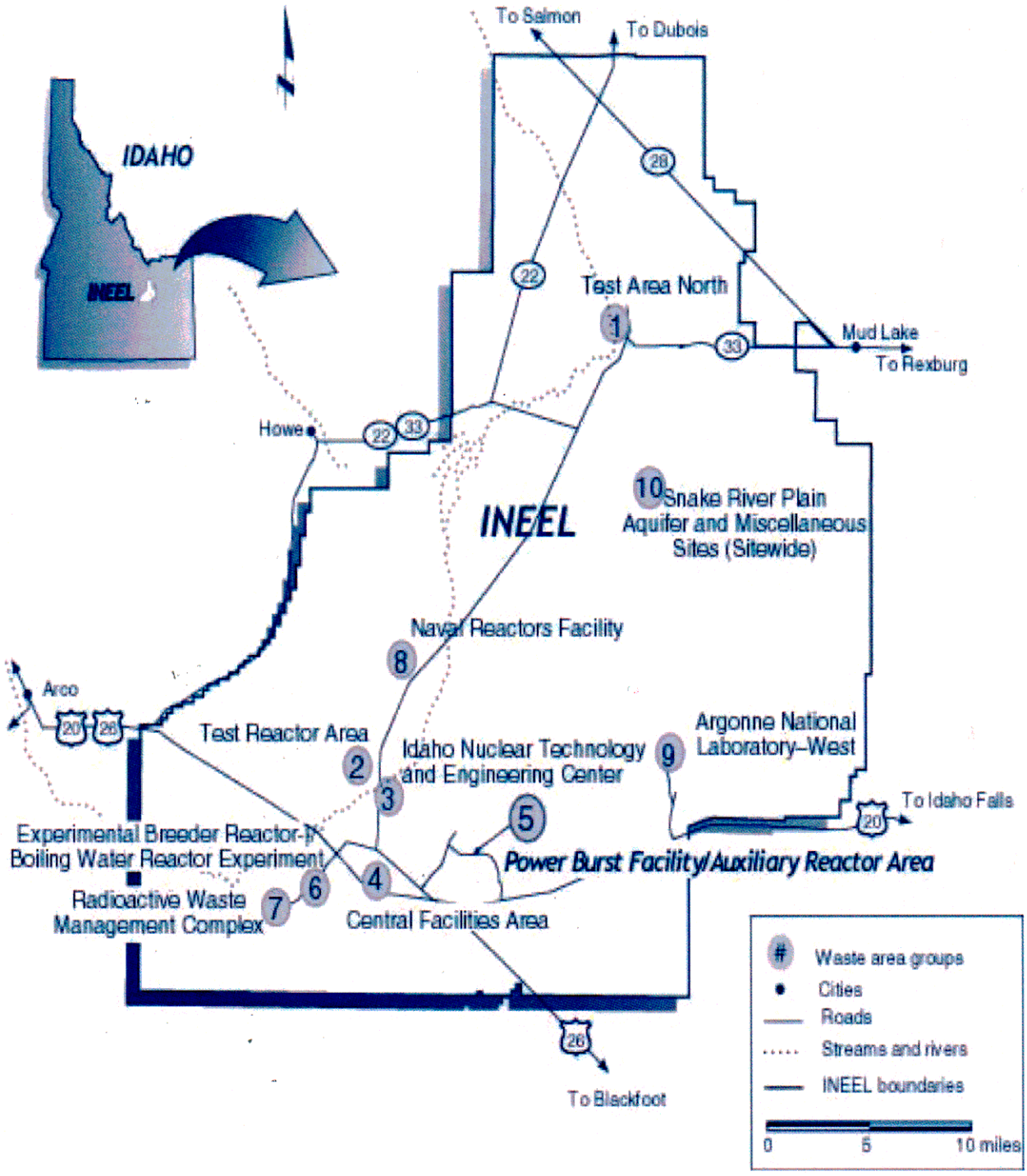

Figure 1. Map of the Waste Area Groups at the Idaho National Engineering and Environmental Laboratory.

2. SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.1 Idaho National Engineering and Environmental Laboratory History

The INEEL, originally established in 1949 as the National Reactor Testing Station, is a U.S. Department of Energy (DOE)-managed reservation that historically has been devoted to energy research and related activities. The National Reactor Testing Station was redesignated as the Idaho National Engineering Laboratory in 1974 to reflect the broad scope of engineering activities that were being conducted at various laboratory facilities. In 1997, the Idaho National Engineering Laboratory was redesignated as the Idaho National Engineering and Environmental Laboratory in keeping with contemporary emphasis on environmental research.

Historically, facilities at the INEEL were dedicated to the development and testing of peaceful applications for nuclear power. Throughout the more than 50 years of INEEL operations, disposal practices have been implemented in compliance with state and federal regulations as well as policies established by DOE and its predecessors. Some of these practices today are not acceptable by contemporary standards and have been discontinued. Contaminated structures and environmental media, such as soil and water, are the legacy of some historical disposals. Occasional accidental releases also have occurred over time. In keeping with the contemporary emphasis on environmental issues, INEEL research is now focused on environmental restoration to address these contaminated media and waste management issues to minimize additional contamination from current and hture operations. As described in the *INEEL Comprehensive Facility and Land Use Plan* (DOE-ID 1996b), the emphasis of work at the INEEL is moving toward managing radiological and hazardous waste, restoring the environment, developing environmental cleanup technologies, preserving national security, and developing nuclear technologies and applications.

2.2 Waste Area Group 5 History

As shown in Figure 2, the ARA and PBF are located in fairly close proximity. In addition to location, the two areas have similar operational backgrounds and sources of contamination. Therefore, the ARA and PBF were consolidated into one Waste Area Group (WAG) 5 for comprehensive evaluation under the *Federal Facility Agreement and Consent Order* (DOE-ID 1991). A synopsis of the history for each facility is given below.

2.2.1 Auxiliary Reactor Area

The ARA-I and ARA-II facilities were constructed in 1957. The ARA-I Facility was built to support the Stationary Low-Power Reactor No. 1 (SL-1) located in the adjacent ARA-II Facility and was the staging area for the emergency response to the 1961 SL-1 reactor accident and cleanup. The SL-1 reactor at ARA-II was operated intermittently from August 1958 until it was destroyed by a nuclear accident in January 1961 (INEEL 1995). Subsequent to decontamination following the SL-1 accident, activities at ARA-I included hot cell operations, materials research, and laboratory operations, including sample preparation and inspection. The main buildings at ARA-II were converted to offices and welding shops. The ARA-II Facility also housed numerous minor structures such as a guardhouse, a well house, a chlorination building, a decontamination and laydown building, a power extrapolation building, an electrical substation, and several storage tanks. The ARA-I and ARA-II facilities were formally shut down in 1988 and 1986, respectively. Decontamination and complete dismantlement of the ARA-I and

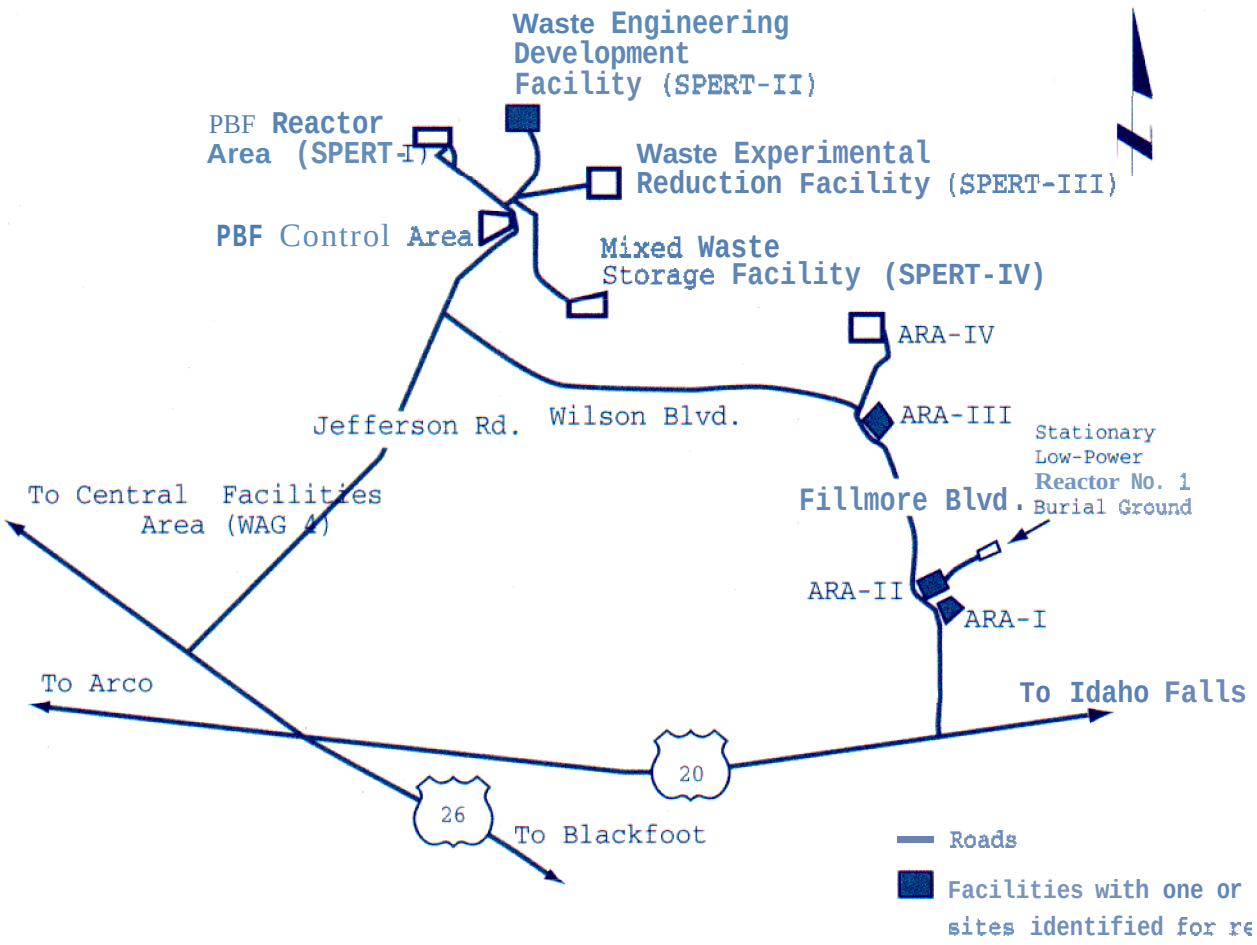

Figure 2. Map of physical configuration of Waste Area Group 5.

ARA-II facilities were initiated in 1995. These activities are documented in the *Final Report of the Decommissioning and Dismantlement of the Auxiliary Reactor Area I Facility* (INEEL 2000) and the *Final Report of the Decontamination and Dismantlement of the Auxiliary Reactor Area II Facility* (INEEL 1999a).

Construction of the ARA-III Facility was completed in 1959 to house the Army Gas-Cooled Reactor Experiment. Experiments continued with the reactor until the plant was deactivated in 1961. In 1963, the ARA-III Facility was modified to support the Mobile Low-Power Reactor series of tests conducted at the ARA-IV Facility. The ARA-III Facility remained active until late 1965, when the Army Reactor Program was phased out. In 1969, two buildings were constructed at ARA-III to provide additional laboratory and office space in support of other INEEL programs. The facility was shut down in 1989. Decontamination and complete dismantlement were initiated in 1990 and completed in 1999. These activities are documented in the *Final Report—Decontamination and Decommissioning for Auxiliary Reactor Area-III* (INEEL 1999b).

The ARA-IV Facility was built to accommodate the Mobile Low-Power Reactor 1, an active project from 1957 to 1964. The Nuclear Effects Reactor was operated at ARA-IV from 1967 to 1970. The area was closed down until 1975, at which time it was used temporarily for some welding qualification work. Decontamination and dismantlement were performed in 1984 and 1985. These activities have been documented in the *Final Report – Decontamination and Decommissioning of the Auxiliary Reactor Area IV Facility* (Edgerton, Germeshausen, and Grier [EG&G] 1988). A small control building, a bunker, a sanitary waste system, and the buried remains of two leach pits are all that remain. Since 1985, the area has been used occasionally for testing explosives in powdered-metal manufacture experiments.

2.2.2 Power Burst Facility

The PBF Control Area was originally built in the late 1950s for remote control of the Special Power Excursion Reactor Test (SPERT) experiments. As shown in Figure 2, the PBF Control Area is centrally located relative to the four SPERT Facilities that surround it. The PBF Control Area was greatly expanded for the PBF program, but the area's primary function as a support facility has not changed. It provides raw water storage and distribution, administrative offices, instrument and mechanical work areas, and data acquisition resources.

The SPERT-I Reactor was operated from 1955 to 1964, was decommissioned in 1964, and was demolished in 1985. Remnants of the original SPERT-I Facility, which consist of a small terminal building, a small instrument cell, some decomposing pavement, an abandoned seepage pit, and an old leach pond remain in the vicinity. The PBF reactor was constructed in 1972 just north of the remains of the SPERT-I Facility. The PBF reactor has been on standby since 1985. Other structures include a maintenance and storage building, cooling towers, two electrical substations, and numerous smaller buildings and structures.

The Waste Engineering Development Facility (WEDF), originally built to contain the SPERT-II Reactor, was constructed in the late 1950s. The SPERT-II Reactor was operational from 1960 to 1964. After the reactor was removed, the facility was converted for research purposes. Current activities include waste treatment development and laboratory operations. A guardhouse is the only other building at the facility. An electrical substation, a leaching pond, a seepage pit, and a couple of underground tanks are the only other structures. The area is also used for temporary storage of uncontaminated lead. The lead is stored outside in cargo containers stacked on asphalt pads.

The SPERT-III Reactor was built in the late 1950's and operational from 1958 to 1968. The reactor building was decontaminated in 1980, and the building was modified to contain the Waste Experimental

Reduction Facility (WERF), which began operation in 1982. Operations at WERF involved volume reduction of low-level radioactive waste. In addition to the WERF Building, the area contains a metal processing facility, a waste storage and handling building, an electrical substation, two exhaust stacks, and underground tanks.

The Mixed Waste Storage Facility (MWSF) originally housed the SPERT-IV Reactor, which was operational from 1961 to 1970. After the reactor was removed, the building was modified slightly and converted to a waste storage facility. Mixed low-level waste, including radioactively contaminated polychlorinated biphenyl waste, is stored in the former reactor pit. The facility also contains an electrical substation, a leach pond, and underground tanks.

2.3 Land and Resource Use

The INEEL land area consists of approximately 2,305 km^2 (890 mi^2). Most of this land, approximately 98%, has not been disturbed by Site operations. Land use on the entire INEEL is restricted, and access to the INEEL and WAG 5 is controlled. Though public highways traverse the INEEL, public access beyond the highway right-of-way is not allowed. Access to the INEEL facilities requires proper clearance, training or an escort, and controls to limit exposures. Current and hture land uses, as well as a summary of groundwater uses (including classification and basis), are discussed in the following subsections.

2.3.1 Current Land Use

The land within the INEEL borders has been classified as industrial and mixed use (DOE-ID 1996b). Typical INEEL land use consists of wildlife management areas, government industrial operations areas, and waste management areas. No residential areas are contained within the INEEL boundaries. As shown in Figure 3, large tracts of land are reserved as buffer and safety zones around the boundary of the INEEL, and operations are generally restricted to the central area. Aside from the operational facilities, the remaining land within the core of the Site is largely undeveloped and is used for environmental research, ecological preservation, and sociocultural preservation. Any hture construction of new facilities at the INEEL likely will occur within the preferred development corridors.

The buffer consists of 1,295 km^2 (500 mi^2) of grazing land (DOE-ID 1996b) administered by the Bureau of Land Management (BLM). Grazing areas at the INEEL support cattle and sheep, especially during dry conditions. Depredation hunts of game animals managed by the Idaho Department of Fish and Game are permitted on the INEEL within the buffer zone during selected years (DOE-ID 1996b). Hunters are allowed access to an area that extends 0.8 km (0.5 mi) inside the INEEL boundary on portions of the northeastern and western borders of the Site.

State Highways 22, 28, and 33 cross the northeastern portion of the Site, and U.S. Highways 20 and 26 cross the southern portion (see Figure 1). One hundred forty-five km (90 mi) of paved highways used by the general public pass through the INEEL (DOE-ID 1996b) and 23 km (14 mi) of Union Pacific Railroad tracks traverse the southern portion of the Site. A government-owned railroad passes from the Union Pacific Railroad through the Central Facilities Area to the Naval Reactors Facility, and a spur runs from the Union Pacific Railroad to the Radioactive Waste Management Complex (RWMC).

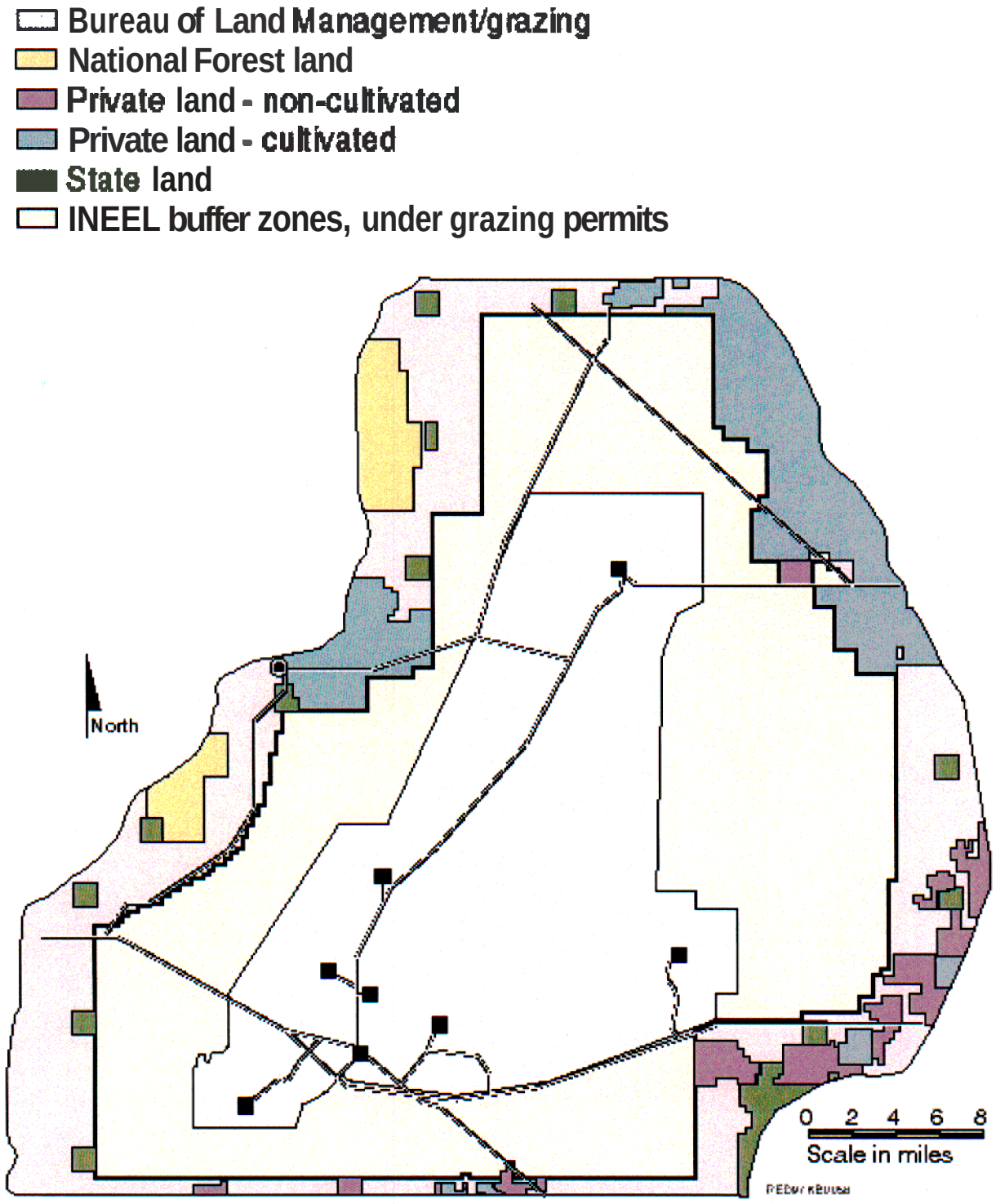

Figure 3. Map of land ownership distribution surrounding of the Idaho Engineering and Environmental Laboratory.

In the counties surrounding the INEEL, approximately 45% of the land is used for agriculture, 45% is open land, and 10% is urban (DOE-ID 1996b). Livestock uses include the production of sheep, beef cattle, hogs, poultry, and dairy cattle (EG&G 1984). The major crops produced on land surrounding the INEEL include wheat, alfalfa, barley, potatoes, oats, and corn. Sugar beets are grown within about 64 km (40 mi) of the INEEL in the vicinity of Rockford, Idaho, southeast of the INEEL in central Bingham County (Idaho 1996). Private individuals or the **U.S.** Government owns most of the land surrounding the INEEL. The BLM administers the government land on the INEEL (DOE-ID 1996b).

2.3.2 Future Land Use

Land-use projections in the *INEEL Comprehensive Facility and Land Use Plan* (DOE-ID 1996b) incorporate the assumption that the INEEL will remain under government management and control for at least the next 100 years. However, implementation of this management and control becomes increasingly uncertain over this time period. Regardless of the future use of the land now occupied by the INEEL, the federal government has an obligation to provide adequate institutional controls (i.e., limit access) to areas that pose significant health or safety risks until those risks diminish to acceptable levels. Fulfillment of this obligation hinges on the continued viability of the federal government and on Congress appropriating sufficient funds to maintain the institutional controls for as long as necessary.

A mix of land uses across the INEEL is anticipated to include unrestricted industrial use, government-controlled industrial use, unrestricted areas, controlled areas for wildlife management and conservation, and waste management areas. No residential development will be allowed within the INEEL boundaries, and no new major private developments (residential or nonresidential) on public lands are expected in areas adjacent to the Site. Grazing will be allowed to continue in the buffer area (DOE-ID 1996b). In addition, the INEEL is currently a National Environmental Research Park and is expected to remain so for the foreseeable future.

The *INEEL Comprehensive Facility and Land Use Plan* (DOE-ID 1996b) was developed using a stakeholder process that involved a public participation forum, a public comment period, and the INEEL Citizen's Advisory Board. The public participation forum membership included members from the local counties and cities, the Shoshone-Bannock Tribes, the BLM, the DOE, the **U.S.** Forest Service, the **U.S.** National Park Service, the Idaho Department of Transportation, Idaho Fish and Game, and eight business, education, and citizen organizations. In addition, the U.S. Environmental Protection Agency (EPA) and the Idaho Department of Environmental Quality (IDEQ) (formerly the Idaho Department of Health and Welfare) participated in an ex-officio capacity. Following review and comment by the public participation forum, the document underwent a 30-day public comment period and was subsequently submitted to the INEEL Citizen's Advisory Board for review and recommendations. No recommendations for residential use of any portions of the INEEL within at least the next 100 years have been received to date. Projected non-industrial use is limited to grazing and similar activities.

Generally, future land use within the INEEL will remain essentially the same as the current use: a research facility within the INEEL boundaries, and agriculture and open land surrounding the INEEL. Other potential but less likely land uses within the INEEL include agricultural applications and the return of the areas to their natural undeveloped states. The *INEEL Comprehensive Facility and Land Use Plan* (DOE-ID 1996b) projects that the ARA will be encompassed by a future buffer to public roads (i.e., **U.S.** Highway 20) and will not be reused for future INEEL operations. Conversely, the forecast for the PBF area includes modification and reuse for industrial operations over the next 100 years.

2.3.3 Groundwater Uses

The current use of groundwater from the Snake River Plain Aquifer is for drinking and irrigation. Groundwater is extracted from various production wells around the INEEL, including two located at PBF. Restrictions on groundwater use based on the impact of WAG 5 operations on the aquifer are not anticipated. The eastern portion of the aquifer was granted sole source status by the EPA on October 7, 1991 (56 Federal Register [FR] 50634). Idaho water quality standards are dictated primarily by the Idaho Ground Water Quality Rule (Idaho Administrative Procedures Act [IDAPA] 58.01.11), the Idaho Ground Water Quality Standards (IDAPA 58.01.11.200), and the Idaho Water Quality Standards and Wastewater Treatment Requirements (IDAPA 58.01.02).

Three categories of protectiveness apply to the aquifer and its associated resources under Idaho regulations: (1) Sensitive Resources, (2) General Resources, and (3) Other Resources. Because no previous action to categorize the Snake River Plain Aquifer under Idaho regulations has occurred, the aquifer defaults to the "General Resources category. General Resource aquifers are protected to ensure that groundwater quality is not jeopardized. Idaho's groundwater standards incorporate federal radiation exposure and drinking water standards (10 Code of Federal Regulations [CFR] 20, Appendix B, Table 2, and 40 CFR 141 and 143). When the two federal standards are not in agreement, the more restrictive standard applies.

3. NO ACTION SITES

The sites at the PBF and ARA areas listed in the ROD (DOE-ID 2000) as No Action and not requiring institutional controls are presented in Table 1. The table summarizes the current status of the institutional controls for each site as of July 2002, but does not include ARA-07 and ARA-08 as discussed previously. Brief descriptions of each site are provided in the following subsections with more detailed information available in the *Waste Area Group 5, Operable Unit 5-12, Comprehensive Remedial Investigation/Feasibility Study* (DOE-ID 1999). Photographs of the sites can be found in Appendix A.

Table 1. Summary of No Action Sites.

Site Code	Site Name	Basis for No Action
ARA-04	ARA-I Sewage Treatment Facility (ARA-737)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992a).
ARA-05	ARA-I Evaporation Pond to the Northeast (ARA-744)	This Track 1 site contains no hazardous substances or radiological contamination (EG&G 1994a, DOE-ID 1996a)
ARA-09	ARA-II Septic Tank (ARA-738)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992b).
		The tank was removed.
ARA-10	ARA-II Septic Tank East (ARA-613)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992c).
		The tank was removed.
ARA-11	ARA-II Septic Tank West (ARA-606)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992d).
		The tank was removed.
ARA-13	ARA-III Sanitary Sewer Leach Field and Septic Tank (ARA-740)	The estimate risk for this Track 1 site is less than 1 E-06 (EG&G 1993a, DOE-ID 1996a).
		The tank and distribution box were removed.
ARA-14	ARA-III Septic Tank and Drainfield (ARA-739)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992e).
		The tank was removed.
ARA-15	ARA-III Radionuclide Tank (ARA-735)	No evidence of leakage was observed at this Track 1 site. Survey confirmed that no radiological contamination is present (Lockheed Martin Idaho Technologies Co. [LMITCO] 1995a).
		The tank was removed.
ARA-17	ARA-I Drain (ARA-626)	This Track 1 site contains no hazardous substances or radiological contamination (EG&G 1993b, DOE-ID 1996a).
		The drain was removed.
ARA-18	ARA-III Radionuclide Tank (ARA-736)	No evidence of leakage was observed at this Track 1 site. Survey confirmed that no radiological contamination is present (LMITCO 1995b).

Table 1. (continued).

Site Code	Site Name	Basis for No Action
		The tank was removed.
ARA-19	ARA-II Detention Tank for Fuel Oil and Radionuclides (ARA-719)	No evidence of leakage was observed at this Track 1 site (LMITCO 1996). The tank was removed.
ARA-20	ARA-IV Test Area Contaminated Leach Pit No. 1	This Track 2 site was decontaminated and dismantled in 1983. With the exception of a ring at a depth of 5.5 m (18 ft), the pit structure was removed. Post-removal samples showed no contamination (EG&G 1994d).
ARA-21	ARA-IV Test Area Septic Tank and Leach Pit No. 2	No evidence of contamination was found in 1987 during decontamination and dismantlement at this No Action Site (Hover 1992f). Confirmed in 2000 during closure activity (DOE-ID 2002).
ARA-22	ARA-IV Control Area Septic Tank and Leach Pit No. 3 (ARA-617)	No evidence of contamination was found in 1987 during decontamination and dismantlement at this No Action Site (Hover 1992g).
PBF-01	PBF Control Area Septic Tank (PBF-724) and Seepage Pit (PBF-735)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992h).
PBF-02	PBF Control Area Septic Tanks (PBF-728 and PBF-739) and Seepage Pit (PBF-736)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992i).
PBF-03	PBF Control Area Septic Tank for PBF-632 and Seepage Pits (PBF-745 and PBF-748)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992j).
PBF-04	PBF Control Area Oil Tank at PBF-608 (substation outside the PBF fence)	The tank and some soil were removed, with some contaminated soil left in place (EG&G 1994a). The estimated baseline risk for this Track 1 site using data collected for PBF-31 and PBF-32 is less than 1E-06, and modeled groundwater concentrations are less than risk-based concentrations (DOE-ID 1999).
PBF-05	PBF Reactor Area Warm Waste Injection Well (PBF-301)	Residual contamination in the vadose zone may be present at an approximate depth of 33.5 m (110 ft), but modeled groundwater concentrations for this Track 2 site are below maximum concentration levels (DOE-ID 1999, Appendix J).
PBF-06	PBF Reactor Area Blowdown Pit for Reactor Boiler by PBF-621	This Track 1 site contains no hazardous substances or radiological contamination (EG&G 1993c, DOE-ID 1996a).
PBF-07	PBF Reactor Area Oil Drum Storage (PER-T13)	This Track 1 site contains no hazardous substances or radiological contamination (EG&G 1993d, DOE-ID 1996a).

Table 1. (continued).

Site Code	Site Name	Basis for No Action
PBF-08	PBF Reactor Area Corrosive Waste Disposal Sump Brine Tank	Remedial action for this interim action site was selected (DOE-ID 1992) and implemented successfully (Parsons 1995) to remove chromium and Cs-137 contamination.
PBF-09	PBF Reactor Area Septic Tank and Drainfield (PBF-728)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992k).
PBF-11	PBF SPERT[a]-I Seepage Pit (PBF-750)	The hazard index is less than 1 and this Track 2 site contains no carcinogenic contaminants (INEEL 1994).
PBF-14	PBF SPERT-II Inactive Fuel Oil Tank (in front of PBF-612)	No evidence of leakage or contamination was observed at this Track 1 site, and it was assessed to be free of significant hazardous or radiological contamination (EG&G 1994e). The tank was abandoned in place.
PBF-15	PBF Reactor Area Corrosive Waste Injection Well (PBF-302)	Residual contamination in the vadose zone may be present at a depth of 35 m (116 ft), but modeled groundwater concentrations for this Track 2 site are below maximum contaminant levels (DOE-ID 1999, Appendix J).
PBF-16	SPERT-II Leach Pond	Estimated human health risk estimates for this Track 2 site are below 1E-06, but ecological hazard quotients for mercury were originally determined to be greater than 10 (DOE-ID 1999). Subsequent sampling demonstrated that mercury concentrations were below ecological levels of concern (DOE-ID 2002).
PBF-17	PBF SPERT-II Septic Tank and Seepage Pit (PBF-725)	This No Action Site contains no hazardous substances or radiological contamination (Hover 19921).
PBF-19	PBF SPERT-III Inactive Fuel Oil Tank (west side of WERF[b])	Estimated risks for this Track 1 site are below 1E-06. The tank was probably removed in 1986, but the subsequent use of the area for outside storage precluded confirmation. The area is covered by pavement and cargo containers (EG&G 1993e).
PBF-20	PBF SPERT-III Small Leach Pond	Estimated risks for this Track 2 site are below 1E-06. The site was used for disposal of sodium hydroxide and sulhric acid (INEEL 1994).
PBF-24	PBF SPERT-IV Blowdown Pit (adjacent to PBF-716)	This Track 1 site contains no hazardous substances or radiological contamination (EG&G 1993f).
PBF-25	PBF SPERT-IV Septic Tank and Leach Pit (PBF-727 and PBF-757)	This No Action Site contains no hazardous substances or radiological contamination (Hover 1992m).
PBF-27	PBF SPERT-III Septic Tank (PBF-726) and Seepage Pit	No evidence indicates that contamination is present at this No Action Site (Hover 1992n).

Table 1. (continued).

Site Code	Site Name	Basis for No Action
PBF-28	PBF Reactor Area Cooling Tower Area and Drainage Ditch	Estimated risks are below 1E-06 for this Track 1 site (EG&G 1993g, DOE-ID 1996a).
PBF-29	PBF Reactor Area Abandoned Fuel Oil Tank	No evidence of contamination was observed at this No Action Site (DOE-ID 1999). The tank was removed.
PBF-30	PBF Reactor Area Abandoned Septic System	No evidence of contamination was observed at this Track 1 site (DOE-ID 1999, Appendix J). The tank was abandoned in place.
PBF-31	SPERT-II Fuel Oil Tank (PBF-732)	The tank and some contaminated soil were removed from this Track 1 site. Modeled groundwater concentrations for residual contamination in vadose zone basalt are below risk-based concentrations for groundwater (DOE-ID 1999).
PBF-32	PBF Control Area Fuel Oil Tank (PBF-742)	The tank and some contaminated soil were removed from this Track 1 site. Modeled groundwater concentrations for residual contamination in vadose zone basalt are below risk-based concentrations for groundwater (DOE-ID 1999).

SPERT = Special Power Excursion Reactor Test
WERF = Waste Experimental Reduction Facility
PBF = Power Burst Facility

3.1 Auxiliary Reactor Area-04

The ARA-I Sewage Treatment Facility (ARA-737) consisted of a chlorinator enclosure located east of the ARA-I Facility and directly north of the ARA-747 septic system. The structure was used to distribute hypochlorite solution into the septic system from approximately 1955 to 1965. In an assessment of the site performed under the Consent Order and Compliance Agreement (COCA) (Hover 1992a), it was determined that the Chlorinator Facility was separate and isolated from both the chemical waste drainage and the sanitary septic systems and that no potential or identified hazardous waste or radiological contamination was at the site. The enclosure was completely portable with no lines tying it to any other structure.

Because the facility is free of significant contamination from either radiological or hazardous waste constituents, no sampling data gaps were identified in the WAG 5 Remedial Investigation/Feasibility Study (RI/FS) Work Plan (DOE-ID 1997), and the ARA-04 site was not retained for quantitative risk evaluation in the Remedial Investigation/Baseline Risk Assessment (RI/BRA) (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews. The portable enclosure was subsequently dismantled and disposed of in the Central Facilities Area landfill.

3.2 Auxiliary Reactor Area-05

The ARA-I Evaporation Pond to the Northeast (ARA-744) is a shallow natural depression that may have received some runoff from an adjacent small parking lot located at the ARA-I Facility (see Figure 4). Anecdotal information indicated that the site was identified for evaluation under COCA because of some stressed vegetation. No records of waste generation or disposal processes are associated with this site. Furthermore, no piping or waste lines extend to the pond nor did any records indicate that the site was ever the destination for any waste stream. Historical monitoring surveys detected the presence of random radioactive particles in both the pond area and the general vicinity around the ARA-I and ARA-II facilities. These hot particles were attributed to the SL-1 reactor accident and cleanup efforts as discussed in the *Record of Decision: Stationary Low-Power Reactor-1 and Boiling Water Reactor Experiment-I Burial Grounds (Operable Unit 5-05 and 6-01), and 10 No Action Sites (Operable Units 5-01, 5-03, 5-04, and 5-11)* (DOE-ID 1996a). In 1993, the site was prepared for removal of radioactive particles; however, the 1993 survey indicated that the area was free of radioactivity above the ambient background. Documenting the determination that no hrther action was warranted for this Track 1 site, the ROD (DOE-ID 1996a) was signed in 1996 by DOE-ID, EPA, and the IDEQ.

Because the site is free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-05 site was not retained for quantitative evaluation in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.3 Auxiliary Reactor Area-09

The ARA-II Septic Tank (ARA-738) was a 5,680 L (1,500 gal) septic tank, which was one of two septic tanks servicing buildings within the ARA-II Facility (see Figure 5). The system was in use from approximately 1959 to 1986. In an assessment of the site performed under COCA (Hover 1992b), no evidence was found that the tank received hazardous waste.

The tank was sampled in 1991 with two samples each collected from the liquid and sludge phases. Radiological analysis of the samples detected Cs-137 in the sludge at a concentration of 51.8 pCi/g. No gamma-emitting isotopes were detected in the liquid phase. Chemical analysis of these samples indicated concentrations below regulatory levels (EG&G 1992).

As documented in the *Final Report of the Decontamination and Dismantlement of the Auxiliary Reactor Area II Facility* (INEEL 1999a), the septic tank and sludge were removed during the deactivation, decontamination, and dismantlement (DD&D) of the facility in 1994; therefore, any potential release of contamination from the septic tank was eliminated. The radiological survey performed prior to excavation was 400 counts above background levels (EG&G 1994c). As the tank was removed, some corrosion was observed on the tank apex; however, there was no evidence that the tank had leaked. After the tank was removed, the radiological survey on the bottom of the excavation was 200 counts above background (EG&G 1994c). The only constituents detected above background concentrations in post-removal soil samples were essential nutrients.

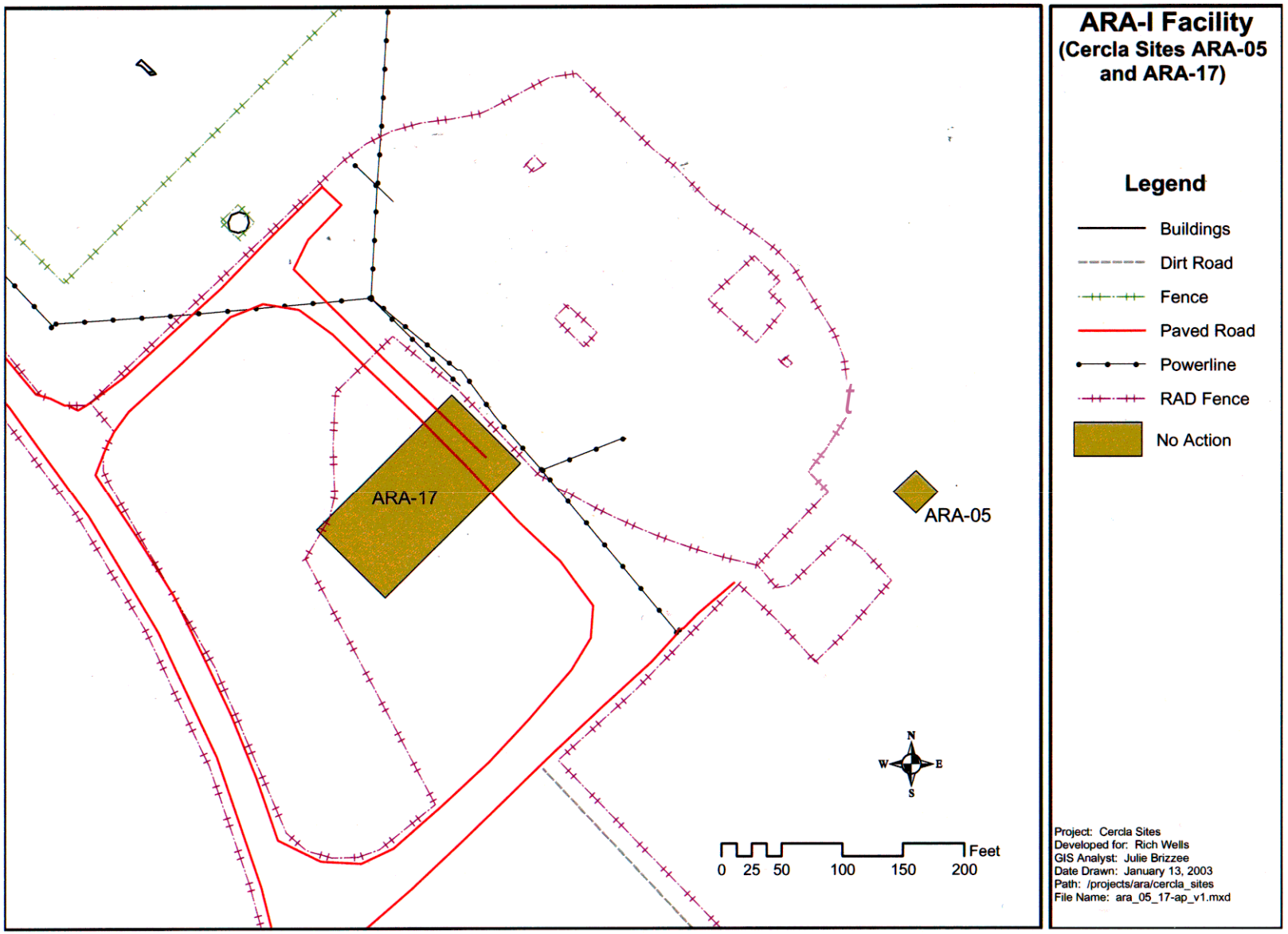

Figure 4. Auxiliary **Reactor Area I Facility.**

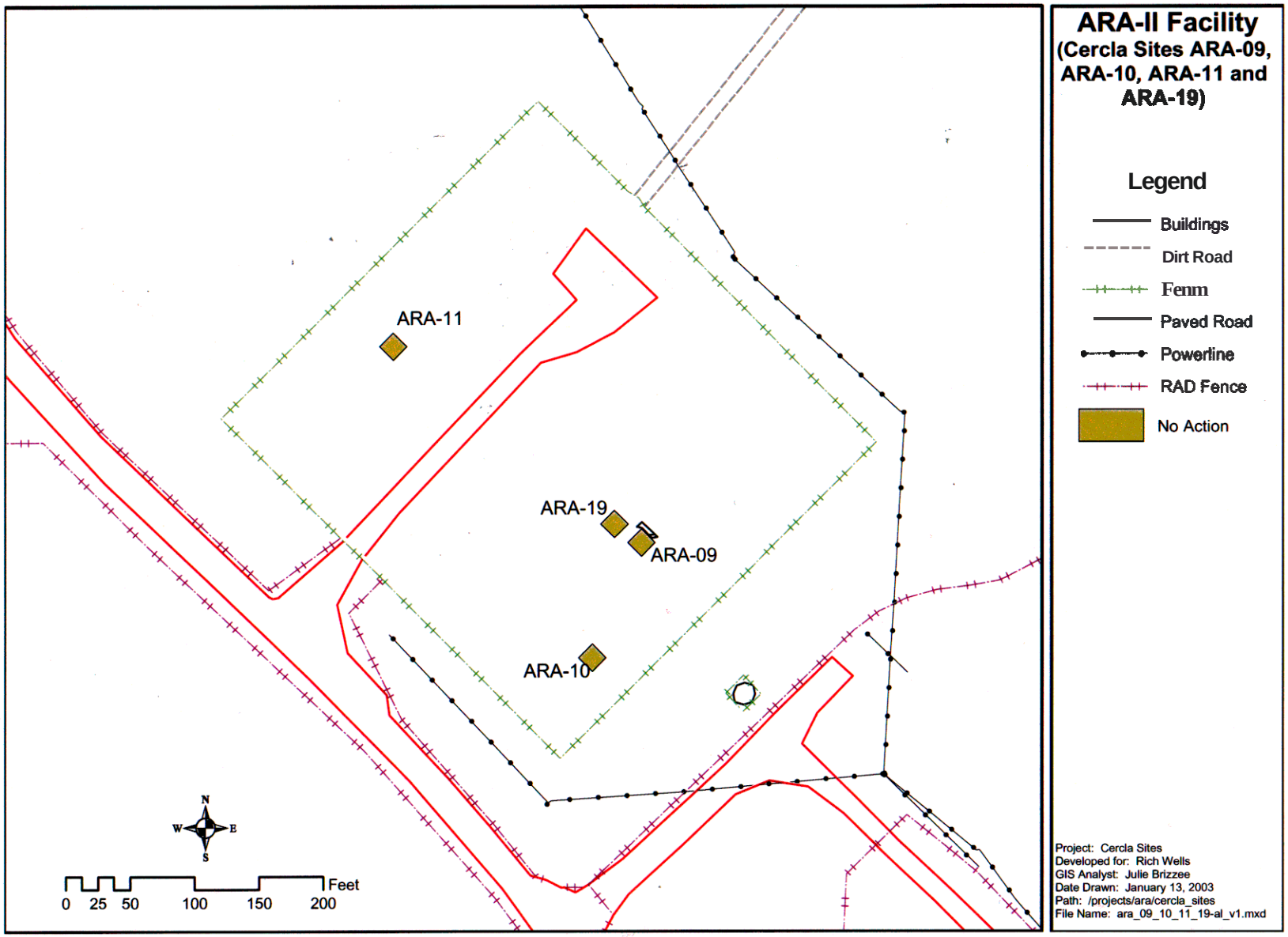

Figure 5. Auxiliary Reactor Area II Facility.

Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-09 site was not retained for quantitative evaluation in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.4 Auxiliary Reactor Area-10

The ARA-II Septic Tank East (ARA-613) is one of 16 sites previously investigated under COCA (DOE-ID 1987) and transferred under the *Federal Facility Agreement and Consent Order* (FFA/CO) (DOE-ID 1991) as a No Action Site without assignment to an OU. The 500-gal underground tank received sanitary waste from the Administration Building (ARA-613) and from a temporary trailer located at the ARA-II Facility (see Figure 5). The system was in use from approximately 1959 to 1986. In an assessment of the site performed under COCA, no evidence was found that the tank received hazardous waste (Hover 1992c).

In 1991, the tank was found empty except for a rusty, scale-like residue. Radiological and chemical analyses of the two residue samples collected in 1991 indicated Cs-137 concentrations of 304 and 341 pCi/g, and Co-60 concentrations of 0.11 and 0.156 pCi/g (EG&G 1992). No other constituents were detected above regulatory levels. As documented in the *Final Report of the Decontamination and Dismantlement of the Auxiliary Reactor Area II Facility* (INEEL 1999a), the septic tank was removed during DD&D activities in 1994 and disposed of at the RWMC; therefore, any potential environmental contamination from the septic tank was eliminated.

However, two data needs were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997). One data need was to determine whether the tank had leaked, and if so, the vertical extent of contamination. The other data need was to determine the presence and concentration of gamma-emitting radionuclides in the subsurface soil. As described in the WAG 5 RI/FS (DOE-ID 1999), samples were collected in the soil that had been below the historic location of the tank. No samples showed radioactivity above background; therefore, the borehole was not extended. The analytical results are presented in Appendix E of the WAG 5 RI/FS Work Plan (DOE-ID 1997). Because no contaminants were identified above background concentrations, the ARA-10 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.5 Auxiliary Reactor Area-11

The ARA-II Septic Tank West (ARA-606) was a 500-gal underground septic tank that received sanitary waste from the Administrative and Technical Support Building (ARA-606) located at the ARA-II Facility (see Figure 5). The system was in use from approximately 1959 to 1986. In an assessment of the site performed under COCA (DOE-ID 1987), no evidence was found that the tank had received hazardous waste (Hover 1992d).

Samples of the sludge and liquid phases of the tank contents were collected in 1991. Radiological analyses indicated the presence of Cs-137 at concentrations of 4.45 and 4.67 pCi/g. No hazardous constituents were detected above regulatory levels. As documented in the *Final Report of the Decontamination and Dismantlement of the Auxiliary Reactor Area II Facility* (INEEL 1999a), the septic tank was removed during DD&D of the facility in 1994; therefore, any potential release of contamination from the septic tank was eliminated.

The site was assessed as free of significant contamination from either radiological or hazardous waste constituents. Any residual surface soil contamination will be addressed as part of the remedial action for the ARA-23 site. Because no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-11 site was not retained for quantitative evaluation in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.6 Auxiliary Reactor Area-13

The ARA-III Sanitary Sewer Leach Field and Septic Tank (ARA-740) consisted of a septic tank, a distribution box, and a drain field located at the ARA-III Facility (see Figure 6). Sanitary waste was disposed of into the system from 1969 to 1980. Between 1980 and 1983, in addition to sanitary waste, small quantities of laboratory waste were diverted to this system. Sampling and analysis yielded low-level concentrations of arsenic, barium, beryllium, mercury, nickel, selenium, and thallium in four samples collected from the leach field (EG&G 1991). The metals were detected at depths from 0.3 to 1.8 m (1 to 6 ft). However, concentrations were lower than background metal concentrations (INEEL 1996). The ROD (DOE-ID 1996a) documenting the determination that no hrther action was warranted for this Track 1 site was signed by DOE-ID, EPA, and IDEQ in 1996.

Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-13 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

As a best management practice, it was determined that removal of the waste remaining in the septic tank and distribution box was an appropriate course of action. As such, an action was taken during the WAG 5 Phase I activities to remove the sludge from the tank and box and abandon the remaining structures in place. The results of this action are documented in the *Remedial Action Report for WAG 5, OU 5-12 Phase I Remedial Action; Sites ARA-02, ARA-16, ARA-25, and Inactive Waste System Sites ARA-07, ARA-08, ARA-13, and ARA-21* (DOE-ID 2002).

3.7 Auxiliary Reactor Area-14

The ARA-III Septic Tank and Drain Field (ARA-739) consisted of a rectangular concrete septic tank and an open-jointed drain field located at the ARA-III Facility (see Figure 6). The system received sanitary waste from the Control Building (ARA-607) from approximately 1959 to 1989. In an assessment of the site performed under COCA (DOE-ID 1987), no evidence was found that the system had received hazardous waste (Hover 1992e). No sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997).

As described in the *Final Report—Decontamination and Decommissioning of Auxiliary Reactor Area-III* (INEEL 1999b), the DD&D program removed the tank in 1996, and the waste is currently stored in an approved storage unit at the ARA-III Facility under the control of the inspector general. The waste has subsequently been sampled and found to be low-level radioactive but not hazardous. Because the tank and waste have been removed and there is no evidence that the tank ever leaked, the ARA-14 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

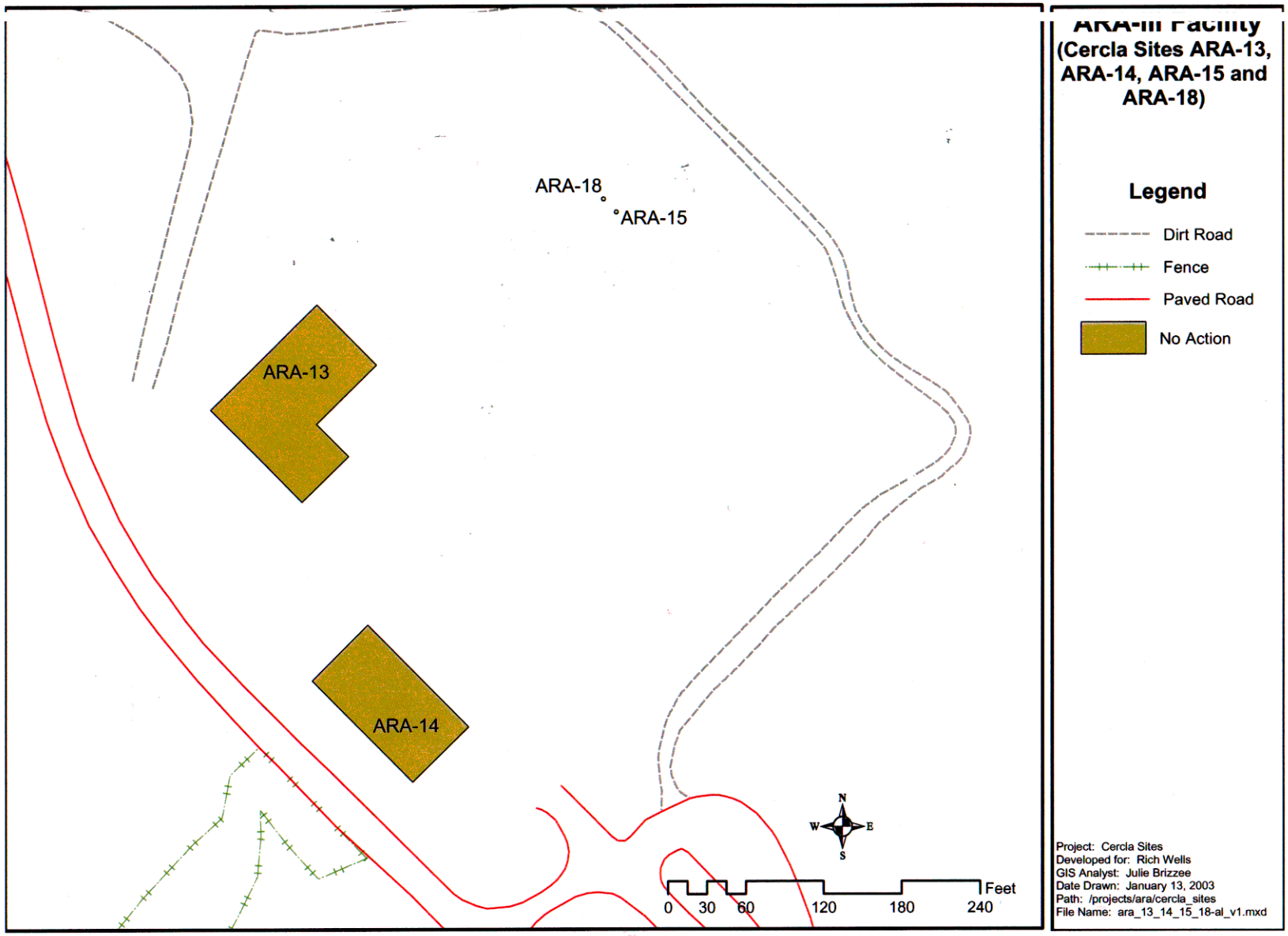

Figure 6. Auxiliary Reactor Area Facility.

3.8 Auxiliary Reactor Area-15

The ARA-III Radionuclide Tank (ARA-735) was the historical location of a 37,854 L (10,000 gal) stainless steel storage tank located at the ARA-III Facility (see Figure 6). The tank was encapsulated in an earthen berm along with two other storage tanks (ARA-736 and ARA-708). Installed about 1958, the tank was used to support reactor research operations until 1965. Although the tank was designated as a high-level waste tank, records indicate that only low-level waste was stored in the tank.

As described in the *Final Report—Decontamination and Decommissioning of Auxiliary Reactor Area-III* (INEEL 1999b), all three tanks and their associated piping were examined and removed in 1993 as part of the DD&D of the ARA-III Facility, and the earthen berm was leveled. The tanks were empty, dry, and in excellent condition with no observable indications of deterioration or leakage. The ARA-735 tank was decontaminated and excessed for possible reuse. Radiological surveys of the tank exterior and surrounding soil confirmed that the site was not contaminated (LMITCO 1995a). Because the ARA-15 site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-15 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.9 Auxiliary Reactor Area-17

The ARA-I Drain (ARA-626) is a nearly flat drainage area south of ARA-I that received drainage from two sources: (1) the boiler room blowdown from the Hot Cells Building (ARA-626) and (2) the raw water storage tank and pumphouse at the southwestern corner of the ARA-I Facility (see Figure 4). The surface dimensions are approximately 46 x 46 m (150 x 150 ft). No concentrations of radiological contamination are above background levels at this site, as confirmed by radiological surveys, and there is no evidence of nonradiological constituents (EG&G 1993b). Historical documents and process information pertinent to the ARA-I Facility do not indicate that this site was the intended destination of any waste stream except uncontaminated water.

Because the ARA-17 site was assessed as free of contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.10 Auxiliary Reactor Area-18

The ARA-III Radionuclide Tank (ARA-736) is the historical location of a 37,854 L (10,000 gal) carbon steel, low-level waste storage tank at the ARA-III Facility (see Figure 6). The tank was encapsulated in an earthen berm along with two other storage tanks (ARA-735 and ARA-708) installed about 1958 and used to support reactor research operations until 1965.

As described in the *Final Report—Decontamination and Decommissioning of Auxiliary Reactor Area-III* (INEEL 1999b), all three tanks and their associated piping were examined and removed in 1993 as part of the DD&D of the ARA-III Facility, and the earthen berm was leveled. The tanks were empty, dry, and in excellent condition with no observable indications of deterioration or leakage. Radiological surveys of the tank exterior and surrounding soil confirmed that the site was not contaminated (LMITCO 1995b). Because the site was assessed as free of significant contamination from either

radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-18 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.11 Auxiliary Reactor Area-19

The ARA-II Detention Tank for Fuel Oil/Radionuclides (ARA-719) is the historical location of a 3,785 L (1,000 gal) underground radionuclide detection tank at the ARA-II Facility (see Figure 5). The tank received liquid waste from the chemistry laboratory located in Building ARA-602 at the ARA-II Facility from 1953 to 1961. It also was used to store radioactively contaminated fuel oil from the 1961 SL-1 accident and cleanup.

The contents of the tank were sampled, analyzed, and identified as radioactively contaminated fuel oil (EG&G 1992). As described in the *Final Report of the Decontamination and Dismantlement of the Auxiliary Reactor Area II Facility* (INEEL 1999a), approximately 3,785 L (1,000 gal) of waste were removed, placed in drums, and shipped for treatment or disposal. The tank and piping were removed during DD&D activities and shipped to the WERF for additional size reduction and eventual disposal at the RWMC. Soil samples showed concentrations above background values for Cs-137, Sr-90, and Th-230/U-234, with detectable amounts of U-234 below background concentrations also being indicated. Field observations indicated that the tank was in good condition, and no stained soil or other evidence indicated that the tank had ever leaked. Therefore, the residual soil contamination was not attributed to tank operations.

The ARA-19 site was assessed as free of significant contamination from either radiological or hazardous waste constituents from the tank, and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997). Because the ARA-23 contaminated soil site encompasses ARA-19, any residual soil contamination associated with the ARA-19 site will be addressed as part of the remediation of ARA-23. Therefore, the ARA-19 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.12 Auxiliary Reactor Area-20

The ARA-IV Test Area Contaminated Leach Pit No. 1 is the historical location of the terminus of the contaminated waste system at the ARA-IV Facility that was active from 1959 to 1970 (see Figure 7). The pit, constructed of concrete blocks and a cap, was between 3 and 4 m (10 and 13 ft) in diameter and approximately 5.5 m (18 ft) deep. Contaminated wastewater from the ARA-IV mechanical equipment room in Building ARA-616 was routed to a waste sump, then to a waste storage tank eventually emptying into the leach pit.

As described in the *Final Report – Decontamination and Decommissioning of the Auxiliary Reactor Area IV Facility* (EG&G 1988), the pit structure, with the exception of the base ring located 5.5 m (18 ft) below the surface, was removed in 1987 during DD&D of the ARA-IV Facility. In 1993, the site was subjected to a Track 2 evaluation using the 1983 DD&D characterization data, with radionuclides being the only contaminant of concern. Prior to DD&D, one sample location showed concentrations above background for U-234 at 7.8 pCi/g, Co-60 at 735 pCi/g, and Ag-108m at 11.63 pCi/g. Post-removal confirmation samples indicated that the site was clean with the exception of one sample that yielded a trace concentration of the polychlorinated biphenyl Aroclor-1260 at 0.17 mg/kg. The excavation was filled with clean soil and contoured to match the surrounding terrain (EG&G 1994d).

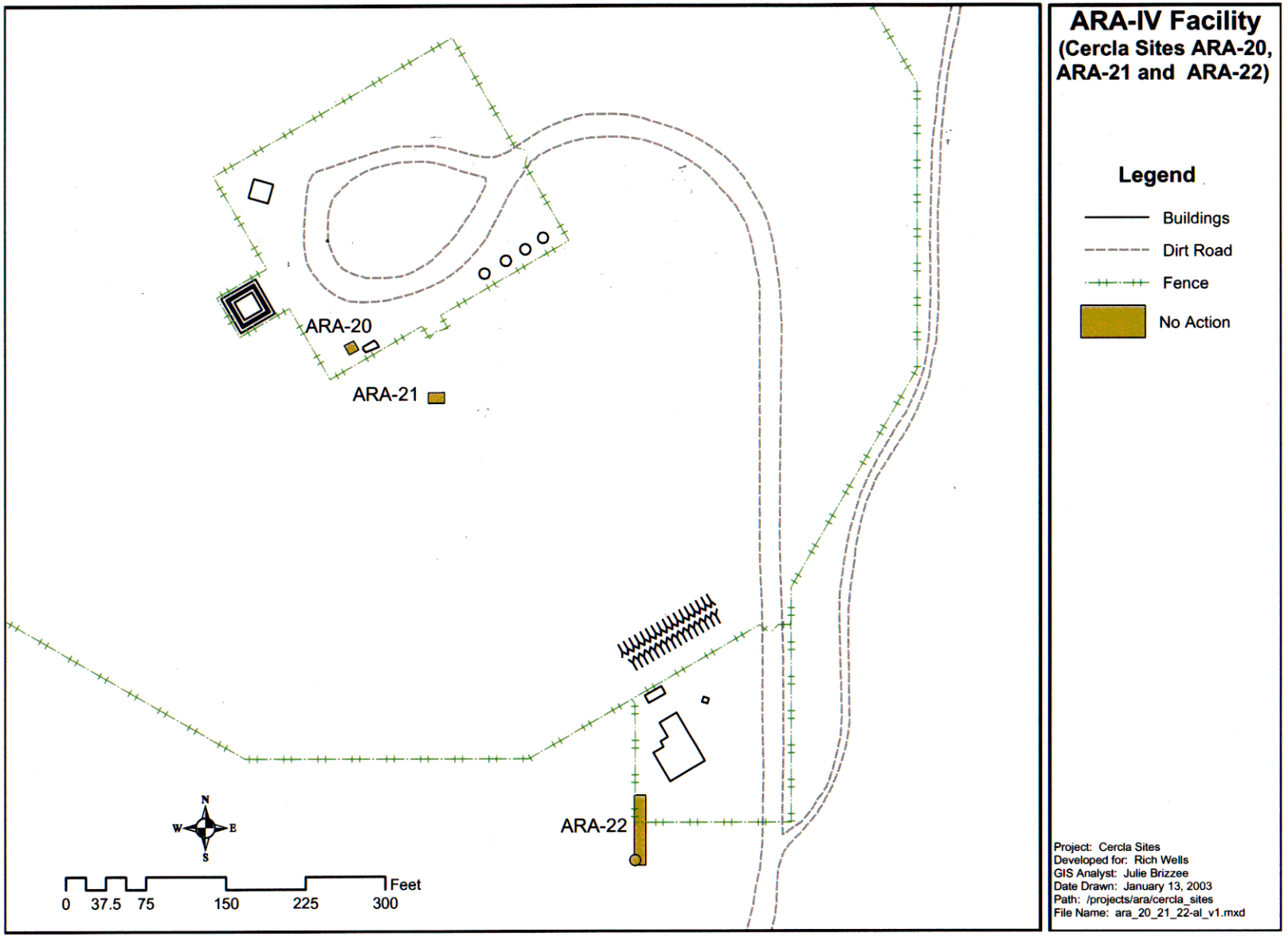

Figure 7. Auxiliary Reactor Area IV Facility.

Because the ARA-20 site was assessed with no unacceptable risks identified and with no sampling data gaps identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-20 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.13 Auxiliary Reactor Area-21

The ARA-IV Test Area Septic Tank and Leach Pit No. 2 consisted of a 3,785 L (1,000 gal) underground septic tank, an estimate 946 to 1,892 L (250 to 500 gal) chlorine contact tank, and a seepage pit that received sanitary waste from the ARA-IV Facility Building, ARA-616 (see Figure 7). The system was used from approximately 1957 to 1970.

During DD&D operations in 1987 (EG&G 1988), the piping was cut 3.0 m (10 ft) from the building, and the tanks and leach pit were covered with 1.8 m (6.0 ft) of soil. In an assessment of the site performed under COCA (DOE-ID 1987), no evidence of significant chemical or radiological contamination was found, based on sampling conducted under the DD&D program in 1987 (Hover 1992f). Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-21 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

As a best management practice, it was determined that removal of the waste remaining in the septic tank and chlorine contact tank was an appropriate course of action. As such, an action was taken during the WAG 5 Phase I activities to remove the waste from the tanks and abandon the remaining structures in place, including the seepage pit. The results of this action are documented in the *Remedial Action Report for WAG 5, OU 5-12 Phase I Remedial Action; Sites ARA-02, ARA-16, ARA-25, and Inactive Waste System Sites ARA-07, ARA-08, ARA-13, and ARA-21* (DOE-ID 2002).

3.14 Auxiliary Reactor Area-22

The ARA-IV Control Area Septic Tank and Leach Pit No. 3 (ARA-617) is a sanitary system that receives waste from the ARA-IV Control Area Building (ARA-617) (see Figure 7). The system has been active since 1959, is still in use, and presently receives only sanitary waste. In an assessment of the site (Hover 1992g), it was reported that the DD&D program characterized the sanitary system in 1987 as finding no evidence of contamination. Because no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the ARA-22 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.15 Power Burst Facility-01

The PBF Control Area Septic Tank (PBF-724) and Seepage Pit (PBF-735) consist of a 3,785 L (1,000 gal) underground septic tank and associated seepage pit that receive sanitary waste from the PBF Control Area Electrical Maintenance Building (PBF-619) (see Figure **8**). The system has been active since 1967 and is currently in use, receiving only nonradiological, nonhazardous sanitary discharges. In an assessment of the site (Hover 1992h), no evidence of contamination was found. Because no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-01 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

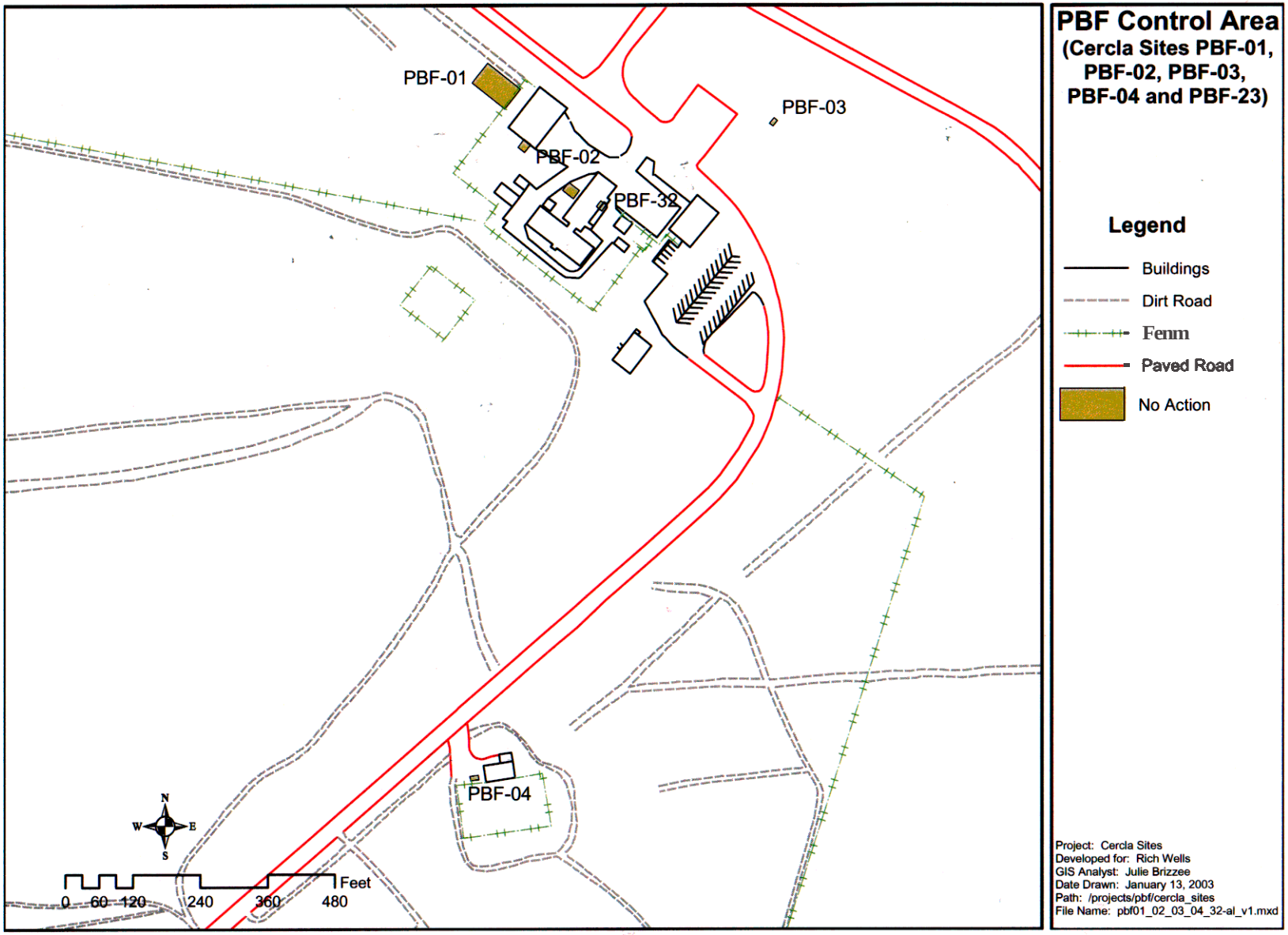

Figure 8. Power Burst Facility Control Area.

3.16 Power Burst Facility-02

The PBF Control Area Septic Tanks (PBF-738 and PBF-739) and Seepage Pit (PBF-736) is a sanitary system comprised of two 2,271 L (600 gal) tanks west of Building PBF-601 and a seepage pit located outside the facility fence southwest of Building PBF-619 (see Figure 8). The system receives sanitary waste from the Control Building and Addition (PBF-601). Constructed in 1955, the system is still in use and presently receives only nonradiological, nonhazardous sanitary discharges. In an assessment of the site (Hover 1992i), no evidence of contamination was found. Because no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-02 site was not retained for quantitative analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.17 Power Burst Facility-03

The PBF Control Area Septic Tank for Building PBF-632 (PBF-744) and Seepage Pits (PBF-745 and PBF-748) is a sanitary system comprised of an estimated 3,785 L (1,000 gal) septic tank and four seepage pits located north of the PBF Support Building (PBF-632) (see Figure 3-5). Constructed in 1980, the system receives sanitary waste from Building PBF-632, which is still in use and presently receives only nonradiological, nonhazardous sanitary discharges. In an assessment of the site (Hover 1992j), no evidence of contamination was found. Because no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-03 site was not retained for quantitative analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.18 Power Burst Facility-04

The PBF Control Area Oil Tank at the PBF-608 substation located outside the PBF fence is the historical site of a 3,785 L (1,000 gal) underground storage tank used to store heating fuel for the PBF Substation Control House (PBF-608) from 1962 to 1976 (see Figure 8). The site is immediately adjacent to the building located approximately 305 m (1,000 ft) south of the PBF Control Area. The tank was originally installed directly over the grounding grid for the 137-kv substation that services all of ARA, the five facilities within PBF, and the Security Training Facility.

Excavated in 1990, the tank was found in very poor condition with observable rust and pinholes. Soil in the excavation was discolored. Because of safety issues related to the proximity of the substation and grounding grid, only 9 m^3 (12 yd^3) of contaminated soil was removed. The remaining soil was sampled for total petroleum hydrocarbons and benzene, toluene, ethylbenzene, and xylene, and the excavation was backfilled with clean soil. Benzene was identified in four of five samples at concentrations ranging from 0.1 to 0.4 mg/kg compared to a site-specific risk-based soil concentration of 0.088 mg/kg back calculated with GWSCREEN in the Track 1 evaluation of the site (EG&G 1994b). The only pathway of concern was ingestion of groundwater. fisk-based concentrations for all other pathways were at least two orders of magnitude greater than detected concentrations.

Sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997) for PBF-04. However, because of safety concerns related to the electrical grounding grid that underlies this site, the work plan identified that sampling results from PBF-31 and PBF-32 would be correlated to PBF-04. Because the sampling results from PBF-31 and PBF-32 were below the EPA Region 3 risk-based concentrations, the PBF-04 site was not retained for quantitative risk analysis in the WAG 5 Comprehensive RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.19 Power Burst Facility-05

The PBF Reactor Area Warm Waste Injection Well (PBF-301) is a 33.5 m (110 ft) deep vadose zone injection well constructed in 1969 for the disposal of low-level radioactive waste and raw coolant water (see Figure 9). No hazardous waste was discharged to the well. Though the well was drilled in 1969, it did not receive waste until 1973 when low-level radioactive waste and raw coolant water were routed to the well. Discharges were limited in activity to 18,000 counts per minute above background. An approximate total of 0.48 Ci was released to the well. Radionuclides with concentrations greater than 0.01 Ci and half-lives greater than 10 years are Cs-137 at 0.30 Ci and tritium at 0.02 Ci.

From 1981 to 1984, raw coolant water was the only effluent. In 1984, the discharge pipes to the well were sealed with concrete. The well was capped and also sealed with concrete. Though the Track 2 evaluation of the site (INEEL 1994) found no unacceptable risks, the uncertainty in the results was sufficient to justify hrther evaluation of the groundwater ingestion pathway. The reevaluation incorporated a simulated revised source term and site-specific input parameters to the GWSCREEN fate and transport model. Results indicate a risk of 1E-06 from Sr-90 (see Appendix J in the WAG 5 RI/FS [DOE-ID 19991). No other risks were identified. With no sampling data gaps identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-05 site was retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999) to evaluate the groundwater risks from Sr-90. As discussed in the RI/BRA presented in Section 8 of the WAG 5 RI/FS (DOE-ID 1999), the GWSCREEN results indicated that no retained sites at WAG 5 contain sources of contamination that have the potential for producing unacceptable risk in the groundwater greater than 1E-04 or a hazard quotient greater than 1 for groundwater ingestion. Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.20 Power Burst Facility-06

The PBF Reactor Area Blowdown Pit for the reactor boiler by Building PBF-621 is a ditch located west of the PBF Reactor Building (see Figure 9). Since 1970, a pipe running from the oil-fired boiler has emptied approximately 114 L (30 gal) per day of blowdown water into the pit. Though the reactor became a fuel storage area in 1997, the boiler is still used to support ongoing activities at the facility requiring continued release of the boiler blowdown water. The blowdown water contains chemicals that are used to inhibit corrosion in the boiler. However, the corrosion inhibitors contain no chromate, are nontoxic, and are used in small quantities. In a radiological survey conducted in 199l, no radiological contamination above background levels was found at this site (EG&G 1993c). Because no data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-06 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

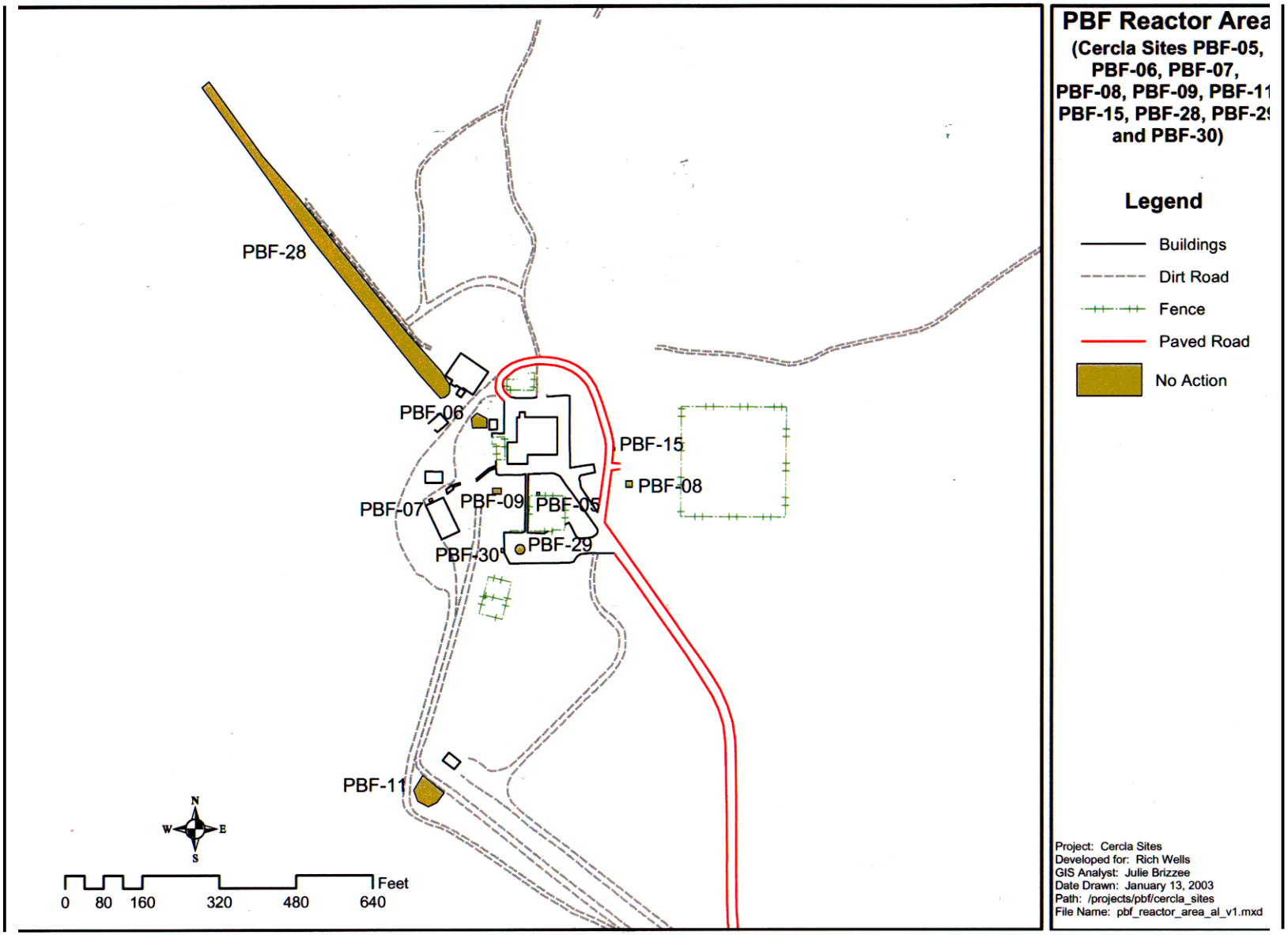

Figure 9. Power Burst Facility Reactor Area.

3.21 Power Burst Facility-07

The PBF Reactor Area Oil Drum Storage (PER-T13) is the location of an oil drum storage area located at the PBF Reactor Area (see Figure 9). The site consists of a wholly enclosed 1.2 x 2.4 m (4 x 8 ft) concrete pad used to temporarily store two or three 208-L (55-gal) drums of used oil and lubricant until pickup for recycling. The site initially only had a steel roof covering the oil drums, but in 1990, the pad was enclosed with metal corrugated siding and a drip pan was installed. No oil spills have been recorded, and the site shows no physical evidence of spillage. No hazardous substances have been stored on the pad (EG&G 1993d), and a radiological survey conducted in 1991 detected no radiological activity above background. Because no evidence of either hazardous or radiological contamination was found at the site and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-07 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.22 Power Burst Facility-08

The PBF Reactor Area Corrosive Waste Disposal Sump Brine Tank (PBF-731) is an unlined concrete sump structure with dimensions of 3.4 x 3.4 x 6.4 m (11 x 11 x 21 ft) (see Figure 9). Effluent routed to the sump from 1972 to 1984 included chromium-contaminated water from the PBF Reactor secondary coolant loop and discharges containing resins, sulhric acid, and sulfur dioxide from the demineralizer system. The sump is still used by the PBF Reactor Facility. Subsequent to 1984, discharges to the sump did not contain chromium (EG&G 1990).

Sampling conducted prior to the implementation of the FFA/CO (DOE-ID 1991) identified chromium and Cs-137 concentrations in the sump sediments that, if released, would be greater than risk-based levels. Therefore, an interim action was implemented that included removal of the sump contents, transportation and storage of the contents at the Mixed Waste Storage Facility (MWSF), and decontamination of the sump. The piping from the sump to the evaporation pond (PBF-733) was removed, and effluent from the sump was rerouted to a new disposal tank (Parsons 1995). Lack of activity on smear samples collected from the interior of the sump at locations determined by radiological survey results indicated the presence of fixed contamination. Because the assessment of the site indicated that the interim action had been successful and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-08 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.23 Power Burst Facility-09

The PBF Reactor Area Septic Tank and Drain Field (PBF-728) is a sanitary system comprised of a 3,785 L (1,000 gal) septic tank and a drain field that permits septic tank effluent to percolate through the soil (see Figure 9). The system receives sanitary waste from the PBF Reactor Building, PBF-620, with the tank located to the south of the building and the drain field to the west. The system was constructed in 1970, is still in use, and presently receives only nonradiological, nonhazardous sanitary discharges.

In an assessment of the site (Hover 1992k), no evidence of contamination was found. Because of the assessment and no identified sampling data gaps in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-09 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.24 Power Burst Facility-11

The PBF SPERT-I Seepage Pit (PBF-750) is a circular seepage pit with a 9 m (30 ft) diameter and a depth of 5 m (15 ft) (see Figure 9). The pit was the terminus of demineralizer regeneration effluent associated with the operation of the SPERT-I Reactor, which operated from 1955 to 1964. The wastewater contained sulhric acid and sodium hydroxide, an acid and a base that tend to neutralize one another. Vegetation observed growing in the bottom of the pit supported the conclusion that the soil in the bottom of the pit was not corrosive. Radiological surveys did not yield detection of beta-gamma or alpha contamination.

In the Track 2 evaluation for the site (INEEL 1994), the seepage pit was concluded not to be a source of unacceptable risk. Because PBF-11 was assessed as free from significant hazardous or radiological contamination and no sampling data gaps were identified in the WAG 5 RIRS Work Plan (DOE-ID 1997), the PBF-11 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.25 Power Burst Facility-14

The PBF SPERT-II Inactive Fuel Oil Tank is the location of an abandoned 1,893 L (500 gal) underground storage tank located in the front of Building PBF-612 that was once used to supply gasoline to an emergency generator (see Figure 10). The tank was in service from approximately 1960 to 1964. Subsequently, the tank was filled with sand and abandoned in place, and the fuel line was disconnected. Two posts prevent parking on the tank site. The top of the tank is approximately 0.6 m (2 ft) below the surface. During the Track 1 investigation of the site (EG&G 1994e), soil was excavated down to the top of the tank to a depth of 0.6 to 0.8 m (2 to 2.5 ft). No stained soil was visible, no volatile organic compounds were detected using field instrumentation, and no holes were observed in either the tank or associated piping (EG&G 1994e).

Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-14 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.26 Power Burst Facility-15

The PBF Reactor Area Corrosive Waste Injection Well (PBF-302) is a 35 m (116 ft) deep vadose zone injection well constructed in 1969 (see Figure 9). From 1972 to 1978, the well received discharge from regeneration of the PBF Reactor demineralizers and from the PBF Reactor secondary coolant system. Discharges to the well were rerouted to the PBF Evaporation Pond in 1978. The historical disposals included an average of 1.1E+06 L/year (2.9E+05 gal/year) of wastewater containing sulhric acid, sodium hydroxide, chromium, hydrazine, and zinc.

A Track 2 evaluation of the site found no unacceptable risks (INEEL 1994); however, uncertainty in the results was sufficient to justify hrther evaluation of the groundwater ingestion pathway. The reevaluation incorporated a simulated revised source term and site-specific input parameters to the GWSCREEN fate and transport model provided in Appendix J to the WAG 5 RIRS (DOE-ID 1999). The results indicated a risk of 1E-06 from hydrazine, but predicted that the peak concentration occurs at

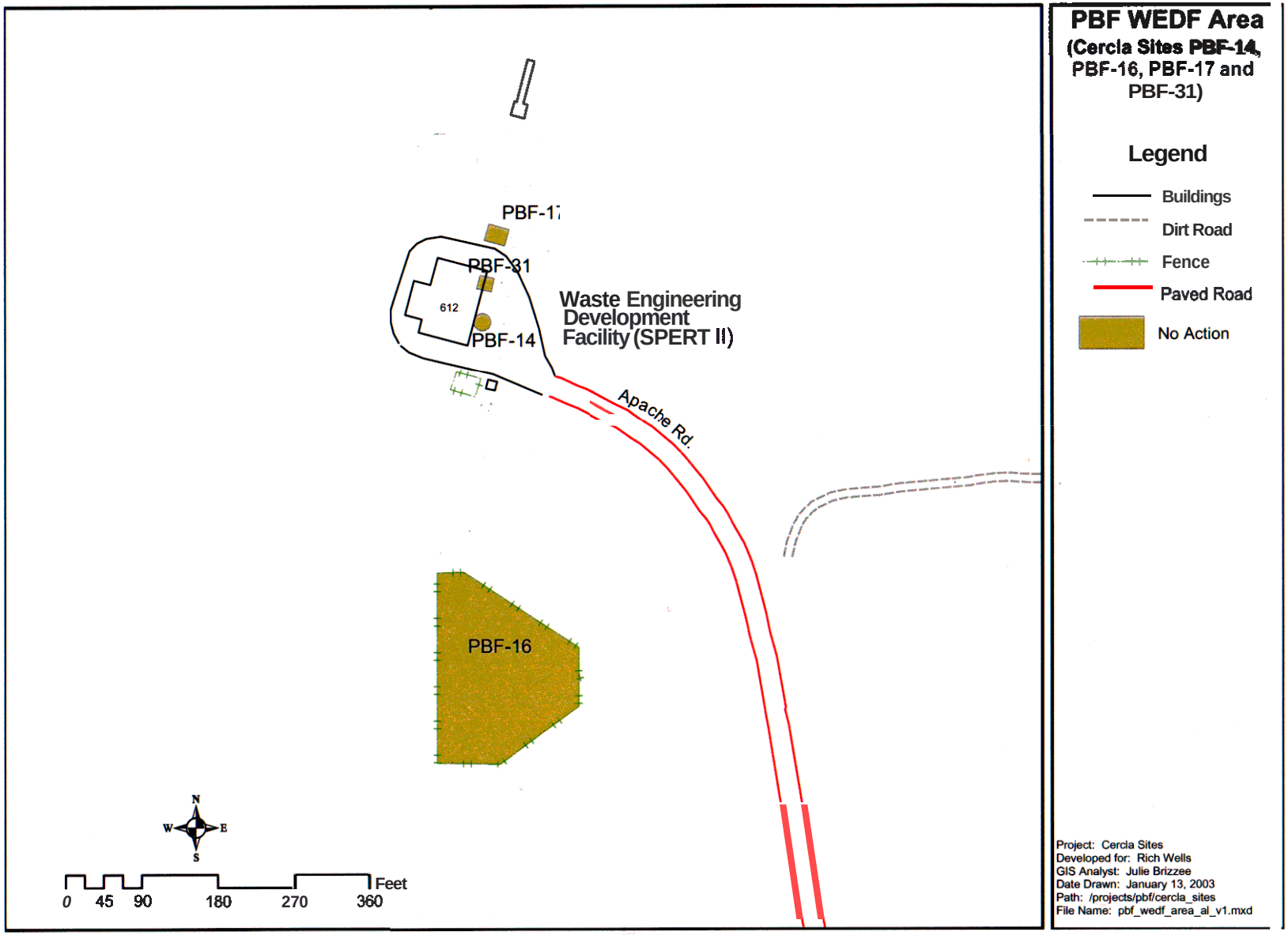

Figure 10. Waste Engineering Development Facility.

approximately 0.5 years after a release. Historical records indicate that releases occurred from 1971 to 1978. Hydrazine has a very low retardation factor, and the simulated hydrazine groundwater concentration falls below the 1E-06 risk-based concentration within 2 years of the release.

Because the GWSCREEN modeling identified no unacceptable risks and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-15 site was eliminated from the quantitative risk analysis. Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.27 Power Burst Facility-16

The PBF SPERT-II Leach Pond is a fenced, unlined surface impoundment, with approximate dimensions of 70 x 51 m (230 x 167 ft), located south of the SPERT-II Reactor Building (see Figure 10). From 1959 to 1964, the leach pond was used for disposal of demineralizer effluent, water softener waste, emergency shower drain water, and discharges from the floor drains in the reactor building.

A characterization of the leach pond was conducted in 1982 and 1983. The 1982 characterization (EG&G 1982) consisted of collecting 18 soil, two water, and several vegetation samples and analyzing them for radionuclides. The radioactivity levels were within background values. In 1983, the pond was characterized for hazardous constituents. Only mercury and lead were detected above INEEL background concentrations (INEEL 1994). Mercury was detected at 0.71 mg/kg, which is below the EPA Region 3 risk-based concentration. Lead was detected at 32 mg/kg. No sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997). The PBF-16 site was retained for quantitative analysis in the RI/BRA (DOE-ID 1999) to assess the risk potential from lead.

As summarized in the WAG 5 ROD (DOE-ID 2000), the SPERT-II Leach Pond was determined not to pose an unacceptable risk to human health for either mercury or lead. However, mercury was identified as a contaminant of concern based on the results of the ecological risk assessment. Therefore, a remediation goal of 0.5 mg/kg was established for mercury contamination in the pond. Subsequent to the WAG 5 ROD (DOE-ID 2000), a more extensive sampling was conducted at the PBF-16 site during the summer of 2000 to determine the extent of contamination at the site. The more extensive sampling effort did not yield any mercury concentrations in excess of the remediation goal. Therefore, the site was dismissed from requiring any additional remediation effort as described in the Phase I Remedial Action Report (DOE-ID 2002).

3.28 Power Burst Facility-17

The PBF SPERT-II Septic Tank and Seepage Pit (PBF-725) is one of 16 sites previously investigated under COCA (DOE-ID 1987) and transferred under the FFA/CO (DOE-ID 1991) as a No Action Site without assignment to an operable unit. The sanitary system was constructed in 1960 and includes a 3,785 L (1,000 gal) septic tank and a seepage pit located north of the SPERT-II (PBF-622) (see Figure 10). The building was later converted to the Waste Engineering Development Facility (WEDF). The system receives sanitary waste from the facility and is still in use.

In an assessment of the site (Hover 1992l), no evidence of contamination was found. Because of the assessment and no sampling data gaps being identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-17 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.29 Power Burst Facility-19

The PBF SPERT-III Inactive Fuel Oil Tank (located on the west side of the current WERF Building) is likely the former location of an 11,335 L (3,000 gal) underground fuel oil storage tank associated with the furnace in the reactor building at SPERT-III (EG&G 1993e) (see Figure 11). As discussed in the Track 1 evaluation (EG&G 1993e), documentation from 1986 indicates that the tank, and any contaminated soil associated with the tank, was scheduled for removal but post-removal records were not found. An attempt was made, using geophysics, to confirm the removal of the tank, but because of interference from nearby structures and the pavement, the survey was inconclusive. Interviews of personnel verified removal of the tank and any associated contaminated soils (EG&G 1993e). The area has since been paved and is not used for outside storage.

Based upon the anecdotal information and because no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-19 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.30 Power Burst Facility-20

The PBF SPERT-III Small Leach Pond was located just north of the WERF. The pond was a 10 x 10 m (30 x 30 ft) gravel pit that was used as a leach pond for disposal of sulhric acid and sodium hydroxide solutions coming from the SPERT-III demineralizers (see Figure 11). The pond area was sampled and backfilled by the DD&D program in 1982. No unacceptable risks were found in the Track 2 investigation of the site (INEEL 1994). Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-20 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999).

Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.31 Power Burst Facility-24

The PBF SPERT-IV Blowdown Pit was used for drainage of the SPERT-IV Reactor Building boiler water from 1960 to 1971. The 0.6 x 0.6 x 1.8 m (2 x 2 x 6 ft) pit, located 9 m (30 ft) north of the reactor building (PBF-716), is a subsurface reinforced concrete structure with an open gravel base for drainage (see Figure 12). The pipe running from the oil-fired boiler emptied approximately 114 L (30 gal) per day of blowdown water into the pit. The blowdown water contained some chemicals that were used to inhibit corrosion. However, the corrosion inhibitors that were used contained no hazardous chemicals, were nontoxic, and were used in very small quantities. Radiological surveys show no radiological contamination above background levels at this site (EG&G 1993f).

Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents, and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-24 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000) allowing for unrestricted land use and exemption from 5-year reviews.

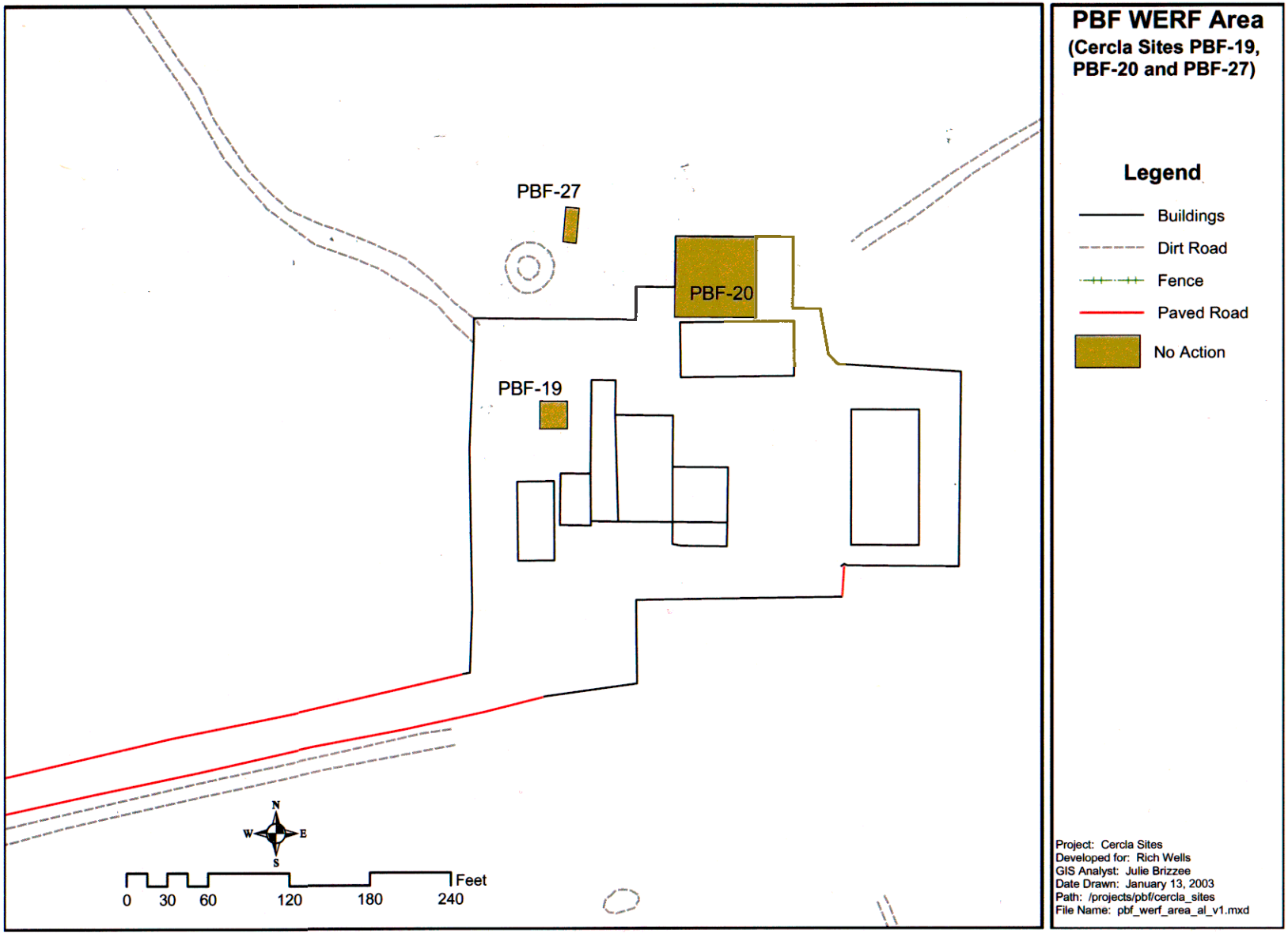

Figure 11. Waste Experimental Reduction Facility.

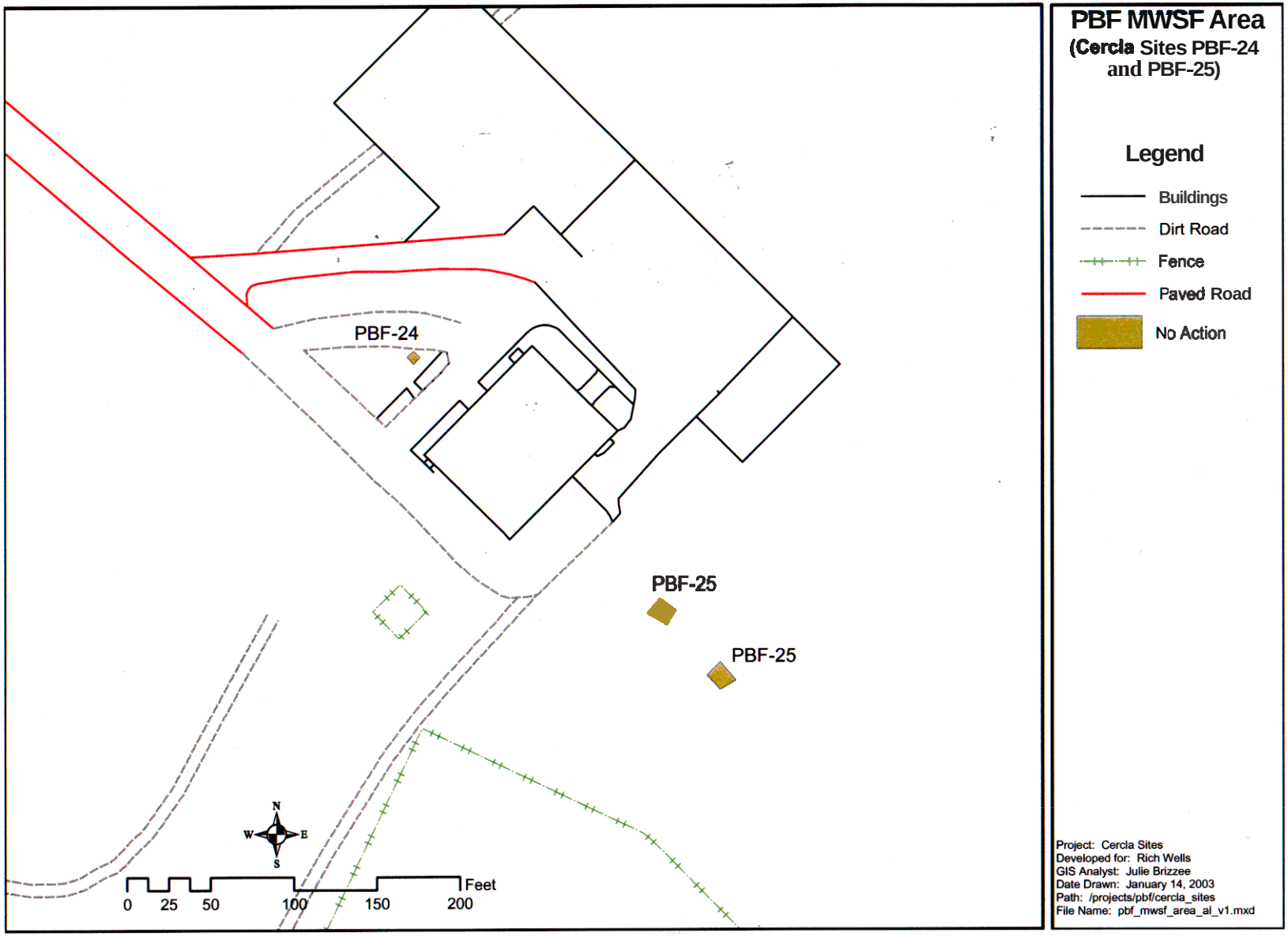

Figure 12. Mixed Waste Storage Facility.

3.32 Power Burst Facility-25

The PBF SPERT-IV Septic Tank and Leach Pit (PBF-727 and -757) is one of 16 sites previously investigated under COCA (DOE-ID 1987) and transferred under the FFA/CO (DOE-ID 1991) as a No Action Site without assignment to an operable unit. The sanitary system includes a 3,785 L (1,000 gal) septic tank and leach pit located southeast of the MWSF (see Figure 12). The system was constructed in 1962 and receives sanitary waste from the MWSF. An assessment of the site (Hover 1992m) found no evidence of contamination.

In 1994, the site was proposed for reevaluation on the basis of anecdotal information, which indicated that the system may have received waste from a temporary photographic laboratory. An investigation found that the concern was unwarranted (see Hiaring 1998b in Appendix J of the WAG 5 RI/FS [DOE-ID 19991). Sample results from 1993 indicated that no contaminant levels of metals were above regulatory levels. Furthermore, a review of construction drawings indicated that the closet that once held the temporary darkroom did not drain to the septic system, but rather to the sump in the lower levels of the reactor pit that collected contaminated waste. Because of this information and no sampling data gaps being identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-25 site was not retained for quantitative analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.33 Power Burst Facility-27

The PBF SPERT-III Septic Tank (PBF-726) and Seepage Pit is one of 16 sites previously investigated under COCA (DOE-ID 1987) and transferred under the FFA/CO (DOE-ID 1991) as a No Action Site without assignment to an operable unit. Constructed in 1959, the sanitary system includes a 2,366 L (625 gal) septic tank and a seepage pit that receives sanitary waste from the WERF Building, PBF-609 (see Figure 11).

In an assessment of the site (Hover 1992n), no evidence of contamination was found. Because of the assessment and no sampling data gaps being identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-17 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.34 Power Burst Facility-28

The PBF Reactor Area Cooling Tower Area and Drainage Ditch consists of an overspray area of surface soil and drainage ditch that is located south and west of the PBF Reactor Area cooling tower (see Figure 9). The reactor cooling-tower began service in 1976 and received uncontaminated reactor secondary-cooling water until 1985. The drainage ditch was constructed in the early 1970s and is approximately 183 m (600 ft) in length. The drainage ditch was used for surface runoff drainage from the PBF Reactor Area and also received water from the boiler blowdown tank and secondary cooling water from the cooling towers.

Soil samples were collected along the entire length of the drainage ditch and the overspray area, and were analyzed for chromium, which was identified as the primary contaminant of potential concern. The results indicated that a 30 x 30 m (100 x 100 ft) area was contaminated by aerosol overspray from the cooling tower. However, the concentrations of chromium found at this site are substantially below risk-based contaminant levels, and surveys indicated no radiological activity above background levels for the cooling tower area or the drainage ditch (EG&G 1993g).

Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-28 site was not retained for quantitative analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.35 Power Burst Facility-29

The PBF Reactor Area Abandoned Fuel Oil Tank is located southeast of the PBF Reactor Building at the northwest corner of Parking Area No. 9 (see Figure 9). This tank serviced a construction building that was demolished in 1971, and the tank was abandoned in place below the building pad.

The tank was sampled in 1993 by PBF operations personnel and was found to contain only water (DOE-ID 1997). In 1996, the tank was removed. During removal, no stained soil was visible, volatile organic compounds were not detected, and no holes were observed in either the tank or associated piping. The area was backfilled and covered with asphalt (DOE-ID 1997).

Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-29 site was not retained for quantitative analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.36 Power Burst Facility-30

The PBF Reactor Area Abandoned Septic System is located southeast of the PBF Reactor Building at the northwest corner of Parking Area No. 9 (see Figure 9). The system includes a 3,785 L (1,000 gal) septic tank and subsurface drain field that once serviced a construction building. The construction building was demolished in 1971.

In an examination of the site, the area of the septic tank was found to be covered by a temporary storage shed. All plumbing to the tank was closed. The tank contents were sampled and no radioactivity or hazardous substance was detected above regulatory levels (see Pollitt 1998 in Appendix J of the WAG 5 RI/FS [DOE-ID 19991).

Because the site was assessed as free of significant contamination from either radiological or hazardous waste constituents and no sampling data gaps were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997), the PBF-30 site was not retained for quantitative analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.37 Power Burst Facility-31

The SPERT-II Fuel Oil Tank (PBF-732) was identified as a site subsequent to the publication of the FFA/CO (DOE-ID 1991) and was added to the list of WAG 5 sites. The site is the historical location of a 7,571 L (2,000 gal) underground storage tank used to supply heating fuel to the WEDF (see Figure 10). The tank was installed in 1960, and was removed and replaced in 1994. During excavation in 1994, it was discovered that the tank had leaked an unknown quantity of fuel oil that saturated the surrounding soil and penetrated the underlying basalt. All contaminated soil was removed from the site; however, the product released into the underlying basalt layer could not be recovered. The site was

evaluated under the Track 1 process (see Pollitt 1998 in Appendix J of the WAG 5 RI/FS [DOE-ID 19991). The initial evaluation eliminated the risk potential for all pathways except for the ingestion of benzene-contaminated groundwater.

Several data needs were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997). These data needs were to define the vertical extent of the soil and bedrock contamination, and to evaluate the benzene degradation potential and capacity in the vadose zone. To meet these data needs, a single sample was collected from the interbed for metals and total petroleum hydrocarbon analyses after completion of a borehole. Samples were collected for benzene, toluene, ethylbenzene, and xylene analysis during the actual drilling operation. After completion of drilling, vapor ports were installed at 6.1 to 7.6 m (20 to 25 ft) below land surface, 20.4 to 21.9 m (67 to 72 ft) below land surface, and 35.1 to 36.6 m (115 to 120 ft) below land surface. These vapor ports were sampled approximately 1 month after installation.

Analytical results from the sampling efforts are presented in Appendix E of the RI/FS (DOE-ID 1999). Because the sampling results were below the EPA Region 3 defined risk-based concentrations, the PBF-31 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

3.38 Power Burst Facility-32

The PBF Control Area Fuel Oil Tank (PBF-742) is one of seven sites identified subsequent to the publication of the FFA/CO (DOE-ID 1991). The site is the historical location of a 7,570 L (2,000 gal) underground storage tank used to supply heating fuel to the PBF Control Building (PBF-601) (see Figure 8). The tank was installed in 1954 and removed and replaced in 1994. During excavation in 1994, it was discovered that the tank had leaked an unknown quantity of fuel oil, saturated the surrounding soil, and penetrated the underlying basalt. All contaminated soil was removed from the site. However, the product released into the underlying basalt layer could not be recovered. The site was evaluated under the Track 1 process (see Pollitt 1998 in Appendix J of the WAG 5 RI/FS [DOE-ID 19991). The initial evaluation eliminated the risk potential for all pathways except for the ingestion of benzene-contaminated groundwater.

Two data needs were identified in the WAG 5 RI/FS Work Plan (DOE-ID 1997). These data needs were (1) to define the vertical extent of the soil and bedrock contamination and (2) to evaluate the benzene degradation potential and capacity in the vadose zone. To meet these data needs, a single sample was collected from the interbed for metals and total petroleum hydrocarbon analyses after completion of a borehole. Samples were collected for benzene, toluene, ethylbenzene, and xylene analysis during the actual drilling operation. After completion of drilling, vapor ports were installed at 6.4 to 7.3 m (21 to 24 ft) below land surface, 19.2 to 20.7 m (63 to 68 ft) below land surface, and 36.0 to 37.5 m (118 to 123 ft) below land surface. These vapor ports were sampled approximately 1 month after installation.

Analytical results from the sampling efforts are presented in Appendix E of the RI/FS (DOE-ID 1999). Because the sampling results were below the EPA Region 3 defined risk-based concentrations, the PBF-31 site was not retained for quantitative risk analysis in the RI/BRA (DOE-ID 1999). Subsequently, it was declared a No Action Site in the ROD (DOE-ID 2000), allowing for unrestricted land use and exemption from 5-year reviews.

4. WASTE AREA GROUP 5 DEPOSTING ACTIVITIES

During 2002, the survey coordinates for the WAG 5 CERCLA sites were reviewed for completeness and to ensure that the coordinates maintained by the INEEL Spatial Analysis Laboratory in the Geographical Information System at the INEEL are correct. The coordinates for several sites were verified in the field by resurveying using the State Plane, Idaho East, North American Datum-27 system with units in feet. The elevation above sea level of each survey coordinate was verified versus the National Geodetic Vertical Datum of 1929 system. This information was uploaded into the Geographical Information System and subsequently used to create the maps presented in Section 3.

Presented in Appendix A are photographs of each of the No Action Sites with the exception of ARA-04. A photograph of ARA-04 is not presented because it was a portable enclosure that has subsequently been dismantled and disposed of. For four of the sites located at the ARA-II Facility (ARA-09, ARA-11, ARA-14, and ARA-19), a single photograph of the facility is provided because of the proximity of the sites to one another.

With the completion of this report, all CERCLA sites addressed herein will have the CERCLA signs removed and surveillance of the sites will be discontinued. The environmental restoration program will maintain all information pertaining to the sites in accordance with INEEL, DOE, and FFA/CO (DOE-ID 1991) requirements for records retention.

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